Urban Orchard Stewardship: Volunteer Motivations and Manager Perspectives

by

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Abstract

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City Fruit is an organization dedicated to growing and caring for healthy and productive fruit trees in Seattle. In cooperation with the City of Seattle, City Fruit is currently managing an urban orchard stewardship program that relies on volunteer stewards to maintain and care for the fruit trees in orchards at seven different publicly owned locations in Seattle. This study focuses on the motivations and experiences of the volunteer orchard stewards. The specific research question that guided this study is: what influences the decision of volunteers to join and continue to participate in urban orchard stewardship programs? Also of interest, how do the volunteers determine if the programs are successful and what recommendations do the volunteers have for improving the program? In order to answer these questions four urban orchard stewards as well as four program managers working for the City of Seattle's Department of Parks and Recreation, City Fruit, and the Washington State Department of Natural Resources were interviewed. The results of this study demonstrate that volunteer orchard stewards are motivated by a variety of concerns including: a desire to learn about fruit tree maintenance and fruit production, the social opportunities that orchard stewardship provides, and public safety. The program manager interview respondents were all very aware of the financial limitations of the City of Seattle and stressed the important role that volunteer organizations such as City Fruit play in maintaining public goods and building community relationships.

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Chapter 1: Introduction

There are a growing number of urban orchards located on public properties in Seattle that are being maintained by groups of volunteer orchard stewards. These urban orchards are a public good that are being co-produced by the City of Seattle and a dedicated group of volunteers. The non-profit organization City Fruit manages the volunteer orchard stewards, provides training for new and continuing stewards, and operates as the liaison between the City of Seattle and the individual groups of volunteer orchard stewards. The volunteer orchard stewardship program offers a unique opportunity to study environmental volunteerism, volunteer management, and the role of orchards in the urban environment. This study focuses on the motivations and experiences of volunteers and paid staff working for and in support of an urban orchard stewardship program in Seattle.

City Fruit is a non-profit that works to protect and maintain existing fruit trees growing on both private and public properties in Seattle. In addition to providing maintenance and pest management courses for interested fruit tree owners, City Fruit works to harvest and donate unused fruit to those lacking food security in Seattle. City Fruit is able to harvest and donate thousands of pounds of fruit from private fruit trees through a yearly harvest program in the Phinney Ridge neighborhood, South Seattle, and West Seattle. Coinciding with the harvest program, City Fruit's urban orchard stewardship program specifically targets fruit trees growing on public spaces and works to restore and maintain healthy and productive urban orchards.

The specific research question that guided this study is: what influences the decision of volunteers to join and continue to participate in urban orchard stewardship

programs? Also of interest, how do the volunteers determine if the programs are successful and what recommendations do the volunteers have for improving the program? In order to answer these questions four urban orchard stewards as well as four program managers working for the City of Seattle's Department of Parks and Recreation, City Fruit, and the Washington State Department of Natural Resources were interviewed. The results of the interviews allowed for a number of conclusions to be made about volunteer motivations and management and the important contributions that environmental stewardship groups can make to cash-strapped municipalities.

The results of this study demonstrate that volunteer orchard stewards are motivated by a variety of concerns including: a desire to learn about fruit tree maintenance and fruit production, the social opportunities that orchard stewardship provides, and public safety. The program manager interview respondents were all very aware of the financial limitations of the City of Seattle and stressed the important role that volunteer organizations such as City Fruit play in maintaining public goods and building community relationships.

This study is composed of five chapters. Chapter Two is a literature review that demonstrates the scientific tradition of similar studies and justifies the research methods that were chosen for this study. The literature review begins with a description of co-production and public goods theory as they pertain to volunteering. This is followed by a thorough examination of the research methods and results of a number of studies that examined volunteer motivations and management. A brief description of the research methods used for this study is then provided.

Chapter Three provides a review of the descriptive background information relating to urban orchards in Seattle and City Fruit's urban orchard stewardship program.

A history of parks management, a review of material published by the City of Seattle, as well as a discussion of the benefits of urban forest, urban agriculture, and the role that environmental stewardship groups play in maintaining public spaces is provided before an extensive introduction to City Fruit is presented.

Chapter Four presents an analysis of the data that was collected for this study. The chapter begins by a more thorough description of the interview and data analysis process that was used in this study. The results of the interviews are then presented; beginning with the results of the interviews conducted with volunteer orchard stewards and ending with the results of the interviews conducted with the paid employee respondents. The study is again summarized in the concluding Chapter Five. A bibliography completes the study.

Chapter 2: Literature Review

The purpose of this chapter is threefold: to introduce the theoretical approach that was taken for this study; to present the methods and findings of related peer-reviewed literature; and finally, to demonstrate why the particular qualitative research methods were chosen for this study. The specific research question that guided this study is: what influences the decision of volunteers to join and continue to participate in urban orchard stewardship programs? A secondary research question is how do the volunteers determine if the programs are successful and what recommendations do the volunteers have for improving the program? This chapter will demonstrate not only why these are important and scientifically relevant research questions but also why the particular research methods were chosen to answer these questions.

This chapter is composed of three parts. The first section presents the theoretical approach of this thesis project, namely public goods theory and co-production. The economic implications of co-production and the value of volunteering are also discussed in the first section. The second section presents an examination of the peer-reviewed literature relating to volunteer urban orchard stewardship and is organized into a series of common findings and similar research methods. Volunteer motivations and volunteer management are discussed in some detail. Finally, the third section describes the qualitative research methods of this study as well as the justification for why these particular methods were chosen over others.

Public Goods and Co-production

Understanding the role of volunteerism and urban environmental stewardship must include an analysis of public goods and co-production as they pertain to the management of urban orchards by volunteer orchard stewards. The distinctions between public goods and common-pool resources, the economic implications of co-production, and the value of volunteer work are all relevant to the management of public goods. Public goods are resources that are available to all and are characterized by little competition between resource users. It is often difficult or unnecessary to regulate the use of public goods. Many public services such as the light from a street lamp, public swimming beaches, public parks and urban orchards or remnant fruit trees that may be growing in public spaces are all examples of public goods. Another important characteristic of public goods is that one's use of the resource does not necessarily diminish the value of the resource to another potential user. Therefore, one member of the public's enjoyment of an urban orchard does not limit the future enjoyment of another member of the public.

Common-pool resources are often subject to instances of resource exploitation commonly referred to as the "tragedy of the commons." The tragedy of the commons refers to instances where resources are over-exploited to the point that the resource collapses and is not able to sustain itself. A tragedy of the commons will arise when there are no practical limits to the use and exploitation of a resource. Garrett Hardin (1968) wrote: "Ruin is the destination towards which all men [or women] rush, each pursuing his [or her] own interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all." According to Ostrom, common-pool resources (CPR^s) are those where it would be too expensive to exclude beneficiaries

and where the exploitation by one user reduces the available resource to another. A "tragedy of the commons" occurs when, "These two characteristics—difficulty of exclusion and sub-tractability—create potential CPR dilemmas in which people following their own short-term interests produce outcomes that are not in anyone's long-term interest" (Ostrom et al. 1999, pgs. 278-279). In other words, a CPR occurs when competition for a limited resource leads to its degradation or possible destruction.

Ostrom argues that the management of common-pool resources needs to be flexible and well suited to whatever problem is at hand. According to Ostrom, choosing the appropriate management policy is complex and, "It all depends on the nature of the problem that we are trying to solve" (Ostrom et al. 2012, pg. 70). Urban orchards are a common-pool resource of a kind; however they don't suffer from the issues of rivalry, exclusion, and over-exploitation that are common to many of the natural resources that Ostrom examined during her lengthy career. Therefore, public goods theory and the management strategy of co-production provide a more accurate theoretical approach to the management of urban orchards.

According to Vlad Turko, a public good is similar to a common-pool resource in that it is hard to exclude free riders—but there is little rivalry between users of a public good and the resource does not necessarily diminish much through either consumption or rivalry (Ostrom et al. 2012, pg. 58). City-owned properties, including parks and urban orchards, meet all of the requirements of public goods. Urban parks provide the same services to all potential users, whether or not their taxes were spent on the maintenance of the park; therefore it is hard to exclude free riders. Because urban parks are designed to provide equitable access to all potential users, rivalry between those who use the parks and enjoy the orchards is limited. Finally, what rivalry there may be between users of

urban parks and urban orchards, the use of the public good does not greatly diminish the service or function that the parks and orchards provide to the greater community.

Depending on the goals of the managing agency or service provider and the service consumer, public goods can be managed in a number of ways. Urban orchards could be managed in a way that maintains the strict authority of the local government so that the local parks department handles all of the regular maintenance of the fruit trees as well as rules surrounding public access to the trees and their fruit. This is an unlikely scenario given the financial investment that such a management strategy would require. Regarding the management of common-pool resources, Mark Pennington writes:

> Should there be only one rule-making body, then any errors are likely to have systematic effects. In polycentric orders, mistakes, though inevitable, are confined to the resource owners in question. Adaptation is also speedier than in a more unitary equivalent—actors can learn from and imitate the most successful models adopted by their neighbors without waiting for approval from some overarching authority or majority. (Ostrom et al. 2012, pg. 35)

The argument in favor of a polycentric rule-making body is an extension of Ostrom's call for flexible policy positions for natural resource management mentioned above. Not only should managers be able to adapt their policies and management strategies, but they should also avoid monolithic management approaches that have the potential to mismanage the natural resource. In this case then, a polycentric management strategy is the most efficient way to care for urban orchards.

A management strategy that exemplifies the flexibility that is needed for natural resource management and the democratization of authority in the planning, production, and provision stages of the public service of natural resources (in this case, urban orchards) is co-production. Co-production refers to a long-term relationship between professionalized service providers and service users where both groups make substantial

resource contributions (Joshi and Moore 2004, Bovaird 2007). Examples of co-production include: parental involvement in schooling, citizen participation and review of police activities, and in the case of this study—volunteer urban orchard stewardship. The co-production of urban orchards in Seattle refers to the relationship between the Department of Parks and Recreation (DPR) and the volunteer urban orchard stewards working for City Fruit (please refer to the description chapter for greater detail on City Fruit).

Traditional natural resource management would task the DPR with caring for every aspect of the maintenance of the orchards and the distribution of the fruit that the orchards produce. Through co-production, the volunteer orchard stewards assume much of the management responsibility and despite being the recipients and users of much of the public services provided by the urban orchards, the volunteer stewards are heavily involved in producing the service. According to their website, City Fruit describes the orchard stewardship program as a "significant public-private collaboration" between the volunteers, the City of Seattle's DPR, and Washington State's Department of Natural Resources. City Fruit hopes that: "Such a model could hopefully be adapted by other communities interested in preserving an important community resource" (City Fruit 2013).

The economic implications of co-production can be expressed by the wages of the traditional service provider and the opportunity costs of the volunteers. Vlad Turko (2012) describes these economic realities in greater detail: "The reality outcome, how much is produced and the relative involvement of the regular producer and the consumer-producer depend on the relative costs encountered by them: the production costs (wages and so on) paid by the regular producer versus the opportunity cost to the consumer of

getting involved in the production process" (Ostrom et al. 2012, pgs. 59-60). Through co-production, the producer relies on help from the consumer because it will lower production costs. The opportunity costs of the consumer are lost wages and other opportunities that volunteers give up to participate in co-production. In the case of City Fruit's urban orchard stewardship program, Seattle's DPR represents the producer of public goods—parks and other city-owned properties—which the volunteer orchard stewards are helping to co-produce. The co-production of healthy and productive urban orchards (that are a public good) also happens to result in positive externalities (fruit which is either donated or used for fund-raising purposes).

Co-production is not simply a means of lowering the cost of providing public services to a community. City Fruit's volunteer urban orchards do provide a free service that would otherwise either be performed by the DPR or left undone. The co-production of urban orchards also helps improve local communities and strengthens the relationship between Seattle residents and their local government representatives as well as their relationship with urban natural areas. Co-production is an efficient option for managing public goods that utilizes the previously unappreciated resources of the users of public services. Co-production not only allows volunteers to become involved in the production of public services, but it also makes the entire system more efficient: "The central idea in co-production is that people who use services are hidden resources, not drains on the system, and that no service that ignores this resource can be efficient. The people who are currently defined as users, clients or patients provide the vital ingredients which allow public service professionals to be effective" (Boyle and Harris 2009, pg 11).

It should also be noted that volunteers do not work without costs to their managing organization. This is to say that both City Fruit and the City of Seattle have

real organizational costs associated with managing urban orchard stewards. Indeed, managing organizations often find that they incur greater costs with every new volunteer but that a constantly growing volunteer force does not necessarily result in ever greater returns of services provided (Govekar and Govekar 2002). Therefore, a constantly growing urban orchard stewardship program may not be in the best interest of either City Fruit or the City of Seattle because it would raise the organizational costs of running the program without ensuring an equal rise in services provided.

Co-production refers solely to the production of a public good and does not typically refer to the use of the public good. It is assumed that the use and eventual consumption of the resource has already been determined and that this determination is what drives the levels of production in the first place. Nesbit argues the following:

> There are two parts to public goods—provision and production. In the provision stage the actors determine which public goods or services to produce, how much to produce, and who will receive the benefits. The production stage is the determination of who and how the good will be produced and how it will be carried out. When discussing coproduction we are concerned with production alone. We assume that the provision decisions have already been determined, and we want to focus on the actual production of the good. (Nesbit 2002, pg. 8)

The fruit that is produced through City Fruit's urban orchard program is utilized by the individual orchard stewardship groups for fund-raising purposes or donated to food banks and other outlets that serve Seattle's needy.

The donation of the fruit does not determine the urban orchards' level of production. In order for production to meet demand, greater amounts of fruit would have to be grown from greater numbers of fruit trees and orchards. Neither the City of Seattle nor City Fruit have the financial resources or volunteer force to meet these demands. How the fruit grown from urban orchards is provisioned is not the sole factor that

compels the City of Seattle and City Fruit to co-produce the urban orchards. The use of Seattle's public parks and the enjoyment of the orchards but not necessarily the fruit that is produced are the uses that drive the co-production of the urban orchards. Seattle's Department of Parks and Recreation and City Fruit are co-producing urban orchards because they are a public good. Ensuring healthy trees, regular maintenance, and pest reduction are the means through which the orchards are co-produced and the orchard fruit is grown for distribution to the needy.

The following is a useful definition of volunteering: "Volunteer activity is work performed without monetary compensation that creates social output that would otherwise require paid resources" (Govekar and Govekar 2002, pg. 36). This definition is particularly true for volunteer urban orchard stewards. Orchard stewards perform necessary tasks that have significant benefit to society and that would otherwise require a greater resource investment from The City of Seattle's DPR. As is discussed below in this chapter in greater detail, volunteers are often motivated by either self interest or altruism: "The research argues that individuals may be motivated to volunteer because of some private motive in addition to or in place of pure altruism" (Govekar and Govekar 2002, pg. 40). That there are a variety of motivations for volunteering suggests that volunteer work can often be rewarding to the volunteers. In other words, "the fact that volunteers are not pursuing wages suggests that volunteering produces something of value to volunteers as well as to the recipients of volunteer-assisted services" (Brown 1999, pg. 5). It is not only important to understand that which motivates the volunteer orchard stewards to participate in the co-production of a public good, but it is also essential to recognize that their volunteer work produces real value to the orchard stewards.

The value to society of volunteering can be expressed in a variety of ways. The dollar value of volunteering is often described as the following: "volunteering has value both to the volunteers, measured by what they willingly give up to volunteer, and to clients, measured by what they might have been willing to pay for volunteer-assisted services had they been given a choice between those services and cash" (Brown 1999, pg. 14). There are many variables that determine these values, and placing a purely economic value on volunteering is difficult because the opportunity cost is different for every volunteer. A higher paid individual sacrifices more opportunity cost than a lower paid individual, but this does not necessarily mean that ones volunteer time is more valuable than another. It is also important to recognize that the individual needs of volunteer-assisted clients are many and ever changing, so while one service has more value on one day it may not hold its value for the client over time.

Given the difficulty of assigning value to the lost opportunity costs of volunteers or the value of the service to clients, the value of volunteering is often measured by the value of the work that is performed. Indeed, "It is important to remember that when a doctor, lawyer, craftsman, or anyone with a specialized skill volunteers, the value of his or her work is based on his or her volunteer work, not his or her earning power" (Independent Sector 2012). The Independent Sector report uses the average wage for "production or nonsupervisory work" in each state plus an additional 12% to determine the dollar value of volunteer work. According to this metric the dollar value of work in Washington State is $21.18 (Independent Sector 2012). When measured across the entire country, "about 61.8 million Americans, or 26.4 percent of the adult population, gave 8 billion hours of volunteer service worth $162 billion in 2008"(Independent Sector 2012).

While there are many benefits to managing a public good through co-production,

it is not always the most appropriate policy approach to managing natural resources or public sector services. Co-production can often lead to instances where cooperating management agencies have disagreements: “Where co-production occurs, power, authority and control of resources are likely to be divided (not necessarily equally), between the state and groups of citizens in an interdependent and ambiguous fashion” (Joshi and Moore 2004, pg. 40).

There are also many problems that may arise through the implementation of co-production: “Coproduction is not a panacea. Problems arise, including conflicts resulting from differences in the values of the coproducers, incompatible incentives to different coproducers, unclear divisions of roles, free riders, burnout of users or community members, and the undermining of capacity of third sector to lobby for change” (Bovaird 2007, pg. 856). Other limitations that can result from co-production include: the dilution of public sector accountability, democratic challenges relating to representation, participation, and professional expertise, and unequal distributions of power that may benefit some members of society more than others (Bovaird 2007, pg. 856). If co-productive methods of managing natural resources or providing public services are designed inappropriately they can lead to a number of problems.

Co-production is simply supposed to improve the production and distribution of public services and strengthen the relationship between members of the public and the professionals that provide the public services. It is not supposed to result in disproportionate power dynamics or lead to some members of the public having greater access or control over a public good. City Fruit volunteers and the employees of the City of Seattle should constantly keep in mind the limitations of co-production so that Seattle's urban orchards can continue to be accessed and appreciated equally.

Volunteer Motivations

Because volunteering produces value to the volunteer it is important to understand the motivations of volunteerism. Only when we understand why volunteers decide to participate in programs such as City Fruit's volunteer urban orchard stewardship program will we be able to better cater volunteer opportunities in a way that maximizes the number of volunteer participants and volunteer retention time. The following section examines the important studies focusing on volunteer motivations and management. While there has been little peer-reviewed work published on the topic of volunteer urban orchard stewardship or indeed urban orchards in general, there are a number of similar research subjects that are directly related. Descriptions of the research methods and conclusions of a number of research studies related to volunteer urban orchard stewardship are provided. The descriptions of the authors' methods demonstrate how particular research methods have been used and why the qualitative research methods of this study are well suited for measuring volunteer urban orchard steward perceptions.

A number of studies employing qualitative research methods have concluded that volunteers are motivated by self-interests (Allison et al. 2002, Barnes and Sharpe 2009, Mannarini et al. 2010, Miles et al. 1998). These studies employed a variety of qualitative research methods, including: survey instruments, delivered either in person or through the mail (Allison et al. 2002, Mannarini et al. 2010), and a case study that relied on a review of the literature, researcher observations, and in-depth interviews (Barnes and Sharpe 2009). The results of these studies (presented below) demonstrate that volunteers are often driven by self interests and seek out volunteering opportunities where they will be able to feel good about their work and by extension their general outlook on life, learn from their activities, and participate at a low personal cost.

In an Italian study measuring willingness to participate in future civic engagement activities, Mannarini et al. (2010) distributed a survey questionnaire to 194 members of three urban planning meetings. The findings of the study indicate that while both personal and community-related variables are both important for citizen participation, personal-related variables, particularly costs and benefits and "the arousing of positive feeling" were more important than creating a sense of community. Moreover, participants were more likely to choose to engage in civic activities where the benefits were clear and the costs were low than activities centered around community building (Mannarini, et al., 2010). Miles et al. (1998) found similar results in their examination of the psychological benefits of participating in environmental restoration work. Volunteers that participated in restoration activities were found to have high levels of satisfaction related to their work, feelings that increased with the amount of time the volunteers spent working in the program. The volunteers also reported having high "life satisfaction" and "life functioning," that led the authors to conclude that volunteering played a positive role in the overall lives of the volunteers (Miles et al. 1998).

Learning opportunities and the potential for career advancement also motivates volunteers. In a case study investigating the volunteer management approach of Dufferin Grove Park in Toronto, Barnes and Sharpe (2009) interviewed ten volunteers and other informants with management authority of the park and found that the park volunteers were driven by self-interest and looked for volunteer work that was skills based and offered the opportunity for personal growth and advancement. The researchers concluded that volunteers were motivated to become and remain active in the park because of their individual interests, passions, and values (Barnes and Sharpe 2009).

Allison et al. (2002) employed a mixed methods mailed survey with both Likert

scale questions related to the Value Function Inventory (VFI) test which focuses on six psychological motivations (career, esteem, protective, social, understanding, and value) as well as open-ended questions soliciting in-depth written responses of environmental volunteers. The findings of the study indicate that the value variable—being able to act on one's altruistic beliefs and humanitarian concern for others—was the most important motive for volunteer activity. Value was closely followed in importance by the motives esteem (feeling good about oneself) and understanding (learning from volunteer experience). Social (participating with others), protective (escaping from one's own troubles), and career (advancement) all scored low on the VFI and were not often mentioned in the written responses as motivations for volunteer activity (Allison et al. 2002).

Volunteers are often motivated by self-interests and often seek out low cost volunteer opportunities that provide clear benefits to the individual. These self-interests are precisely the reason why individuals who would otherwise be simple consumers of a public service choose to participate in the coproduction of a public good. The volunteer urban orchard steward benefits not only directly through the realization of a properly maintained urban orchard, but this type of stewardship also provides a number of intangible benefits that are directly related to the volunteers own self interests.

Not all volunteers are motivated merely by self-interest. The altruistic nature of volunteer work suggests that those that choose to participate are not solely driven by self-interest and that there are many selfless motivations that drive people to give up their time to work without financial remuneration. Presented below are descriptions of some of the literature that has focused more closely on the altruistic motivations for volunteering. A number of recent qualitative studies have concluded that volunteers are

motivated by a wide variety of more altruistic reasons which demonstrate that volunteers are not solely interested in personal growth and advancement (Moskell et al. 2010, Romolini et al. 2012, Westphal 2003, Wolf et al. 2011). These studies employed the following research methods: surveys and focus group discussions (Moskell et al. 2010), interviews and a 3CM cognitive mapping exercise (Romolini et al. 2012), mailed surveys (Westphl 2003), and interviews which included a thematic clustering exercise of the dominant themes reported by the participants (Wolf et al. 2011). The results of these studies demonstrate that not only are there a diverse set of motivations for volunteering but that the social outcomes of their work are often as important if not more important to the volunteers than the environmental goals of the managing organizations.

In a mixed-methods study, Moskell et al. (2010) employed surveys to examine the motivations of volunteers at street tree-planting events in Brooklyn, as well as surveys and recorded group discussions to measure urban forestry practitioner approaches to volunteer management during an industry convention in Portland, Oregon. The results from the volunteer surveys indicate that there are a wide variety of motivations for volunteer activity. The respondents were motivated by environmental and social benefits, benefits to youth, enjoyment of the activity, and a number of other reasons. The majority of the participants were affiliated with a church, school, or nonprofit organization that encouraged their volunteering. Interestingly, the results showed that participants with previous urban forestry experiences were more interested in simply helping the tree-planting organization itself, a finding that the researchers took as an indication for a greater likelihood of future volunteering. The results from the focus group indicate that the major challenges that urban forestry practitioners face in engaging and maintaining a strong base of volunteer workers is a lack of public understanding about urban forestry

and weak communication with the general public (Moskell et al. 2010).

Romolini et al. (2012) employed a mixed methods design of in-depth interviews and a 3CM cognitive mapping exercise to investigate practitioner views about urban environmental stewardship in Seattle. The results suggest that the following value groups motivate stewards: environmental, personal, and concern for community. Similar to the results of Miles et al. (1998), urban environmental stewardship was found to improve the livability of a targeted community and provide psychosocial benefits to participants that are thought to be strong motivators for volunteer activity. Finally, the researchers conclude that social outcomes are at least as important as the ecological benefits of stewardship activities, indicating that social motivations, and not just environmental motivations are strong indicators of voluntary environmental stewardship activity (Romolini et al. 2012).

Results from this study are similar to those of an earlier study of environmental stewardship stakeholders in Seattle that concluded that the social and individual motivators of the stewardship participants and community were more important than were the environmental goals of the stewardship organizations (Wolf et al., 2011). Interview results from this study indicate that people who choose to participate in environmental stewardship programs in Seattle are motivated by a variety of environmental, personal, and social reasons. The researchers suggest that despite the overlying environmental goals of the stewardship organizations, the motivations of the participants suggest that social and personal-related goals are as important, if not more important, than the environmental goals of the program (Wolf et al. 2011).

Finally, in a study of long-term volunteers working for environmental stewardship programs in Michigan, Ryan et al. (2001) concluded that volunteers are motivated by the

tangible results of their work. Furthermore, the authors found that helping the environment and gaining knowledge were the main motives of the participants volunteering. Furthermore, the authors conclude that environmental stewardship programs offer a unique opportunity for people to "help the environment in a very tangible way" (Ryan et al. 2001). These results highlight how important participation and being able to see and claim ownership for the results of your work are to motivating long-term environmental stewardship volunteers.

In addition to the many self-interested and altruistic motivations for volunteer work, a number of peer-reviewed studies examine the relationship between environmental disturbance and environmental stewardship (Hunter 2011; Tidball et al. 2010; Tidball and Krasny 2007). In each, the role of disaster is seen as a great motivator for stewardship activity. In a review of the literature, Tidball and Krasny (2007) argue that environmental stewardship programs increase both urban ecological diversity and the diversity of human communities, both of which makes urban areas more resilient to future disturbance events (Tidball and Krasny 2007). Furthermore, in a more recent review of the literature, Tidball et al. (2010) conclude that communities and individuals turn to stewardship projects such as community gardening and urban forestry because it makes the participating individuals feel better after a disturbance event, it provides a needed learning experience, and it strengthens the general community (Tidball et al. 2010).

In a study with similar conclusions, Hunter (2011) employed a mailed survey to measure the reactions of Ann Arbor residents following a windstorm that resulted in the loss of a large number of street trees. The findings indicate that proximity to disturbance increases interest of stewardship. Moreover, people become more engaged and willing to

participate in stewardship programs after experiencing environmental disturbance (Hunter 2011). The author suggests that the study was limited because the returned surveys were not matched to households, and therefore there was no way to match individual surveys to households or to ensure that single households were not returning multiple surveys.

The literature clearly shows that volunteers are motivated by environmental, social, personal, and other considerations. Like the studies that concluded that volunteers are primarily motivated by self-interests, these findings are important because they highlight that volunteers can act on diverse motivations; a lesson volunteer managers would be wise to keep in mind when designing volunteer programs. Because volunteers are motivated by both the social and environmental implications of their work, volunteer managers would be also be wise to address these issues in their attempts to recruit and maintain a large pool of volunteers. Finally, as important as volunteer motives may be, it is often enough to recognize that the volunteer may benefit from his or her work. This is particularly the case where public goods are concerned: "The provision of a public good for one's own sake benefits others. As when parents volunteer in their children's classrooms or coach their children's soccer teams. The distinction between altruism and self-interest is not always observable; neither is it particularly relevant" (Brown 1999, pg. 12). This is to say that while it may be hard to estimate the social benefit of the work that volunteer orchard stewards perform, it might be enough to recognize that they too receive the value of an improved public good.

Volunteer Management

Qualitative research methods have also been used to research volunteer management strategies (Millar 2003, Straka et al. 2005). Understanding the best practices for volunteer management is very important. The strength of any volunteer organization is based not only on the dedication of its volunteers but also on how well the organization is managed. The following study descriptions will describe the particular qualitative research methods that were employed in order to study volunteer management, as well as the findings they provided and their relevance to this research project.

In a research project exploring what makes stewardship and conservation organizations successful, Millar (2003) employed telephone interviews with program experts and made a number of conclusions that have implications for volunteer management in general. Namely, that stewardship and conservation organizations all rely heavily on volunteers, and that the best way to utilize this labor force is to provide targeted tasks. Organizations are able to retain a more engaged volunteer force for a longer period of time when their appointed tasks are clearly defined in terms of expectations, duration, and the type of volunteer skill set that is needed to perform their tasks. Therefore, it is very important for volunteer managers to make their expectations known and to clearly define the exact nature of the work that the volunteers will be tasked with.

The previously mentioned studies by Barnes and Sharpe (2009) and Ryan et al. (2001) also provide some important conclusions that are relevant to volunteer management. Barnes and Sharpe (2009) find that organizations should be as flexible as possible in their volunteer management strategies so as to provide work experiences that are centered on the interests of the volunteers. Moreover, because volunteers are aware

of and motivated by the costs and benefits of their potential volunteer work managers should factor this ratio into their management strategy (Barnes and Sharpe 2009). Similarly, Ryan et al. (2001) found that in addition to providing opportunities where the volunteers can achieve a sense of accomplishment, volunteer managers should seek to provide opportunities for continued learning that appeal to as many volunteer interests as possible. Additionally, the authors provide a list of useful volunteer management strategies that include: considering volunteer motivations, providing learning opportunities, demonstrating to the volunteers how their work has benefited the environment, creating time for socialization, allowing time for reflection, and improving the organization of the project (Ryan et al. 2001).

Studies suggest that a lack of public awareness is a large barrier that limits the number of people that choose to volunteer for environmental stewardship programs (Millar 2003, Straka 2005). Millar (2003) found that in addition to their lack of financial resources, the organizations all identified a lack of public awareness about their programs as major barriers to success. The organizations all agreed that focusing on social issues, in addition to environmental issues, would broaden their appeal and improve public awareness of their organizations (Millar 2003). Similarly, when researching participation in urban and community forestry programs in South Carolina, Straka et al. (2005) distributed surveys through the mail and concluded that public awareness was one of the major barriers to successful volunteer management. The researchers found that the participants were primarily involved because of job requirements as well as professional and personal reasons. However, previous participation was a very strong indication of future participation and the non-participants cited not knowing about the programs as the main reason for their lack of participation. The authors conclude that raising public

awareness is a crucial management strategy for organizations that rely on volunteers (Straka et al. 2005).

Research Methods

The examination of the studies relating to volunteer motivations and management has direct relevance to my study. Their methods and conclusions provide a useful framework for how I conceptualized and carried out my thesis project. I have yet to find any indication that researchers have dealt with the subject of volunteer recommendations for the organizational improvement of environmental stewardship programs in all of the studies that I have so far described or in the greater literature research that I have carried out. My thesis project is not only a continuation of previous research on the topics of volunteer motivation and management, it is also provides new insights into the role that volunteers play in environmental stewardship programs and their potential for making previously overlooked recommendations for organizational improvements.

The present chapter has reviewed the literature on the important studies relating to volunteer urban orchard stewardship. These studies demonstrate the wide variety of questions that researchers in these fields are attempting to answer. The majority of studies reviewed above relied upon qualitative methods to measure the opinions and beliefs of human respondents and provides a clear methodological history that demonstrates that the qualitative research methods chosen for this study are appropriate for measuring the opinions and perceptions of volunteer urban orchard stewards. The studies related to volunteer motivations and management cover a variety of disciplines with varied theoretical and methodological approaches. Each of these methodological approaches is equally valid in their own right, and the diversity of the approaches only

strengthens the overall understanding of their topics.

Eight interviews were conducted between January and February of 2013 (Please refer to the Data Analysis Chapter for a greater description of the interview process). Four volunteer orchard stewards as well as four paid program managers were interviewed. The interviews were all recorded with a digital audio recording device and transcribed onto a computer with a word processor. Once the transcriptions were complete an initial review of the texts was performed. The interview transcripts were then analyzed for dominant and recurring themes. Particular categories and themes that fit within the texts were identified and coded in order to recognize the dominant themes of the respondents. When possible, the most commonly used words or phrases were identified to further help determine the dominant themes of the respondents.

Similar to previous studies measuring human perceptions and opinions, this research project relied upon in-depth interviews of volunteer urban orchard stewards provides a greater understanding of volunteer motivations, volunteer management, and organizational structure. This research project also provides suggestions for understanding and improving volunteer experiences, as well as strengthening volunteer urban orchard stewardship programs. All of these insights will improve the management of urban orchards in particular and public goods in general. This thesis project also adds greater understanding to the role that environmental stewardship organizations play in urban environments and the management of public goods. The following chapter of this research project will address many of the issues surrounding urban orchard stewardship.

Chapter 3: City Fruit and Volunteers

In order to fully understand the many implications of City Fruit's urban orchard stewardship program, an examination of the many issues surrounding urban agriculture and forestry are necessary. The important issues surrounding urban orchard stewardship are presented below. To begin with, a brief history of the development of Seattle parks is provided to demonstrate the context in which the current legalities surrounding urban orchards and agriculture in public spaces of the City of Seattle were developed. The legal context for urban agriculture and urban orchards is then illustrated by a thorough discussion of the legislation, initiatives, and other materials published by the City of Seattle. The benefits of urban forestry are then discussed in some detail, followed by exhaustive descriptions of urban agriculture and food security. A review of the role that non-profit stewardship groups are increasingly playing in the management of urban green spaces is then provided. Finally, City Fruit and the urban orchard stewardship program is described in detail.

Managing Seattle Parks for Services Rather than Material Goods

The following section addresses the history of parks in Seattle in order to explain the reasoning behind regulations that technically prohibits people from growing and harvesting food on public properties. Before Seattle's system of urban parks and open spaces were developed there was a debate between members of the City Council about the role that parks should play in urban environments. On one hand stood those in favor of having a system of parks that would provide material goods, such as firewood and hunting grounds, and on the other hand were people that believed that parks were

supposed to provide services—rather than material goods—to the community. The debate was eventually settled and parks in Seattle were initially built in order to provide social services to the community in order to promote the development of the city and the efficient use of tax money.

In addition to beautifying the city, parks were thought to help integrate previously separate sections of the city and encourage business opportunities. Another important social service that the parks were thought to provide was a way to control immigrant populations that were growing in Seattle by the turn of the 20th century. Blackford (1980, pg. 558) writes, "They viewed parks, municipal ornaments, and a civic center as tools to beautify Seattle and as the means to harmonize the often clashing values of the city's fragmented social classes and groups." Parks, playgrounds, and playfields were training-grounds for democracy that would "lift people out of the slums" and were designed to "teach ethnic groups and working-class children the fundamentals of middle-class morals and values" (Blackford 1980, pg. 561). Seattle parks were, therefore, specifically designed to provide particular services to the city that spaces for fire wood, hunting, or other private interests would not have been able to provide.

The demand for a citywide system of parks in Seattle was so great that work progressed quickly and over the course of only two decades a parks plan was adopted and developed. The City of Seattle hired an initial landscape architect to develop a system of urban parks in 1892 but a final agreement over the designs could not be made by the city council. Little came of this early work and it was not until 1903 when the Olmsted firm of landscape architects was hired that real progress was made. John C. Olmsted developed a plan that was adopted by the City Council, and the City of Seattle spent four million dollars over the next decade building a system of parks throughout the city:

"During the first ten years after its submission, most of the primary elements of the plan would, through purchase, gift, condemnation, or bonded indebtedness, be incorporated into the city's structure" (City of Seattle 2012c). By 1913 the park system was mostly completed and "Twenty-five improved parks, twelve playgrounds, and twenty-five miles of boulevards lay within Seattle's boundaries" (Blackford 1980).

The visions of the early park proponents and the Olmsted firm persist to this day. Seattle parks continue to provide services to the community rather than resources or material goods. Seattle Municipal Code 18.12.070 states:

> It is unlawful for any person except a duly authorized Department of Parks and Recreation or other City employee in the performance of his or her duties, or other person duly authorized pursuant to law, to remove, destroy, mutilate or deface any [...] shrub, tree, [...] plant, flower, [...] in any park. (City of Seattle 1977)

This regulation has been interpreted to also mean that not only is it illegal to remove plants from city property, but it is also illegal to remove even a part of a plant (such as an apple, blackberry, or other edible part of a plant that may grow in city parks). In either case the distinction is irrelevant because violators are threatened with heavy fines and imprisonment (McLain et al. 2012). That the City of Seattle has consented and allowed City Fruit's orchard stewardship program as well as 73 community garden projects to operate on Seattle-owned land suggests that in some cases the regulations that prohibit the removal of plants from city parks are being ignored.

The history of managing parks and other city properties for services rather than material goods is also evident in the position that the City of Seattle takes on growing fruit trees on public properties adjacent to private homes. The ban on growing fruit trees on street parking strips that are owned by the City of Seattle is still enforced, which according to Nordahl (2008) makes all who dare to violate this ban "vigilantes" and

presents an interesting legal situation that will have to be remedied in the future. Regardless of the type of public property involved, City Fruit's urban orchard stewardship program is actively reshaping how the City of Seattle views its public spaces and regulations surrounding park management and urban agriculture. The following section will go into more detail about the City of Seattle's legal positions on urban agriculture, public orchards, and the use of public spaces for growing food.

Material Published by the City of Seattle on Urban Orchards, Urban Agriculture, and Urban Forest Management

The City of Seattle has recently been very public in its support of promoting urban agriculture as a desired use of public lands. The following section presents the major publications and reports, initiatives, and positions surrounding park management and the use of public spaces that the City of Seattle has taken in the last decade. In October 2012 the City of Seattle released the Food Action Plan, which is a comprehensive strategy to improve the local food system. In the face of a number of environmental and social challenges the City of Seattle hopes to "identify ways to ensure that everyone in Seattle is able to participate in a food system that promotes health, environmental sustainability, racial and social equity, and a thriving economy" (City of Seattle 2012a, pg. 8). The four goals of the Food Action Plan are: healthy food for all, grow local, strengthen the local economy, and prevent food waste. One of the five strategies the plan suggests for growing more food locally is to "Develop and support programs to produce food on City-owned land" (City of Seattle 2012a, pg. 22). Furthermore, two of the approaches that are listed in the introduction of the plan are to "Enhance partnerships with the public and private sectors and community-based

organizations in the City and across the region" and to "Stimulate collaboration among community organizations, institutions, neighborhoods, and governments" (City of Seattle 2012a, pg. 3). The Food Action Plan clearly stresses community involvement and the appropriate use of public spaces for urban agriculture.

Although not specifically named in the report, City Fruit's urban orchard stewardship program is a recognized component of the Food Action Plan's strategy for encouraging food production on city-owned land. The orchard stewardship program is briefly described in the Grow Local section of the report. In addition to arguing that the stewardship program provides food for the community, the report states:

> There are more than 37 orchards and fruit gardens, small and large, on City of Seattle-owned land, from which volunteers harvested over 1,500 pounds of fruit in 2011. Proper maintenance and harvesting of these trees and shrubs will help expand and sustain this valuable food resource for years to come. Nine of these orchards are currently maintained through a partnership between Department of Parks and Recreation, volunteers, and a community-based non-profit organization.
> (City of Seattle 2012a, pg. 22)

Despite not naming City Fruit in this brief description of the orchard stewardship program, the City of Seattle clearly values the program and benefits from the publicity it allows.

The orchard stewardship program is also an example of the type of local initiatives called for by the Seattle City Council in the Local Food Action Initiative, which was released by the council with support from the mayor in April of 2008. One of the goals of the Local Food Action Initiative is to increase access for all residents to healthy and local foods. One of the suggested ways to reach this goal is: "Increasing the opportunities for Seattle residents to purchase and grow healthy food in the city" (City of Seattle 2008). Urban orchard stewardship is the type of 'specific action' called for by the

Local Food Action Initiative that can "strengthen Seattle and the region's food system in a sustainable and secure way" (City of Seattle 2008).

In 2007, the City of Seattle released its Urban Forest Management Plan (UFMP), which describes the urban forest as, "all trees in the city on both public as well as private property. This forest includes street trees, park trees, forested parklands, trees on institutional campuses, and trees in many private ownership settings" (City of Seattle 2007, pg. 11). The UFMP is intended to reverse decades of neglect and canopy cover loss by improving the management of existing and future trees while simultaneously meeting the ecological, economic, and social goals of urban forest management. Although no specific mention is made to fruit trees in the UFMP, the document stresses the importance of encouraging community engagement in urban forest management.

The following three goals are presented in the Community Framework section of the UFMP: enhance public awareness of the urban forest as a community resource; engage the community in active stewardship of the urban forest; and promote citizen-government-business partnerships (City of Seattle 2007, pg. 6). The orchard stewardship program is an ideal example of a way to meet all three of these goals. That being said, fruit trees are only mentioned a single time in the report, and then only in reference to the cumulative impact on the declining canopy cover due to private fruit tree owners resorting to cutting their fruit trees down in frustration over fallen leaves and fruit (City of Seattle 2007, pg. 31).

A critical issue that is made apparent through a review of the UFMP is that the City of Seattle is currently understaffed to meet the maintenance demands of its urban forest. Both street trees as well as park trees are on a maintenance schedule that is well below current industry standards. The following provides an apt description of the

maintenance realities for the trees in Seattle's parks: “Parks is responsible for 90,000 trees in developed park properties and along park-owned boulevards [...] The 2000 Pro Parks Levy added a third 3-person tree crew to Parks that has been dedicated to providing preventive tree maintenance in high-use park locations. As a result, Park’s tree pruning cycle went from 26 years to 18 years” (City of Seattle 2007, pg. 39). While the Department of Parks and Recreation employs three 3-man crews and prunes its trees every 18 years, other U.S. cities staff their departments to meet industry standards so that each tree is given maintenance attention every 5-7 years. Not only is the City of Seattle not meeting industry standards of tree maintenance schedules but much of the maintenance work done by Seattle's Departments of Parks and Recreation is done in response to: “demand-based tree-related emergencies, primarily the removal of dead, diseased, or fallen trees” (City of Seattle 2007, pg. 39). Given these realities it is no wonder that the City of Seattle is not able to devote enough resources to its urban orchards and must rely upon a dedicated group of volunteer orchard stewards.

Initially completed in 1994 and frequently updated, Seattle's Comprehensive Plan guides land-use for both public and private lands. The Comprehensive Plan also attempts to find a balance between environmental sustainability and economic growth in the face of a growing population in Seattle. The policy guidelines of the Open Space Network of the Urban Village Element section of the Comprehensive Plan state that the City of Seattle must: “Promote inter-agency and intergovernmental cooperation to expand community gardening opportunities” and “Create opportunities for people to experience the natural environment by including parks, forested areas, community gardens (P-Patches), and viewpoints among the priority uses to be considered for the City’s surplus properties” (City of Seattle 2005). These policy guidelines are significant not only

because they make all departments within the City of Seattle responsible for promoting urban gardening but also because they dictate that unused public properties should be used to expand such gardening opportunities. Through these policy guidelines the City of Seattle has taken an unprecedented step in recognizing the role that local food and urban gardening can play in sustaining healthy environments and growing populations.

In describing Seattle's comprehensive plan as the "most empowering document available to any municipality," Nordahl (2008, pg. 58) writes: "Seattle's comprehensive plan demonstrates the municipality's commitment to urban agriculture, and offers hope of a new mindset for the increasing number of public officials across the country who believe growing food is not only an acceptable land use, but necessary for the health and well-being of the community and environment." City Fruit's urban orchard stewardship program is an example of an alternative use of public open-spaces, and its continued success will encourage other municipalities across the country to follow Seattle's lead and invest in greater support of urban agriculture and non-profit stewardship groups.

Despite the City of Seattle's broad acceptance of using public spaces for urban agriculture and environmental stewardship, it is difficult to find much published material on urban agriculture or orchard stewardship in Seattle. This knowledge gap makes it difficult to discern whether the City of Seattle's positions on urban agriculture and the use of public spaces are actually being put into action. There are not many models that demonstrate an appropriate use of public spaces for urban agriculture and orchard stewardship; therefore many of the advances that have been made by the City of Seattle in this regard are groundbreaking. This situation is not limited to Seattle: "The topic of public produce—that can more descriptively be defined as municipal agriculture—does not receive a lot of publicity or fanfare, so it is difficult to unearth research on this topic.

As such, many municipalities are implementing programs more or less from scratch" (Nordahl 2009, pg. xiii). There was no model of orchard stewardship on which the City of Seattle could base its partnership with City Fruit. The orchard stewardship program has had to start from scratch, and each lesson in city land use regulations, or in cooperating with city employees or other members of the orchard stewardship organization have had to be learned first hand.

Volunteer urban orchard stewards are responsible for maintaining a small yet important component of Seattle's urban forest. Urban orchards are public goods that provide many benefits to the community. Sarah Foster, the Manager of the Urban and Community Forestry Program of the Washington State Department of Natural Resources, said the following about the benefits of urban orchards:

> And those multiple benefits, you can get food and you can get canopy and you can get clean air and clean water. So they still have, most fruit trees still have all of the other benefits—just on a much smaller scale. Because they generally don't get very big. Most fruit trees don't get bigger than 25 feet and by the time they get that big they start to decline.
> (Foster, Personal Interview Jan. 16, 2012)

It is necessary to understand the benefits of urban forests to realize why it is so critical that they be properly maintained so that they do not decline and stop providing their benefits. The following section presents a review of the many environmental and social benefits of urban forests that are generally under-appreciated by the public and demonstrates the importance of the work being done by City Fruit's volunteer orchard stewards.

The Benefits of Urban Forests

In addition to the fruit they produce, urban orchards contribute to many of the services that are provided by urban forests. A brief review of some of the many benefits that are provided by urban forests is warranted. The environmental and social benefits of urban forests are well known. In a literature review written for the U.S. Forest Service, McPherson (1992) presents some of the many benefits of urban forests: energy savings, carbon sequestration, improved air quality, reduced storm water runoff, and enhanced recreational opportunities. All of which have real monetary benefit to the impacted community (McPerson 1992). Urban orchards are a part of a complex urban forest and the implications of the work of volunteer orchard stewards reaches far beyond mere fruit production and individual tree maintenance. Productive and healthy urban orchards are a public good that contribute to an extensive list of public services that deserve to be better appreciated.

As was demonstrated by the discussion of the City of Seattle's Forest Management Plan (please see above), maintaining and improving urban forests requires great effort and financial expenditures. Given the high level of commitment necessary for urban forests, Zhu and Zhang (2008) used an economic model to examine the demand for urban trees so as to better understand how willing people are to pay for the benefits of urban forests. The researchers examined 242 cities in the U.S. with populations over 100,000 and concluded that the demand for urban forests is related to income, so that for every 1% change in income the demand for urban forests will fluctuate by 1.76%. Moreover, urban forest cover is also related to the price of urban trees so that for every 1% increase in price, the demand will drop by 1.26% (Zhu and Zhang 2008).

While examining the real environmental and monetary benefits of urban forests,

Nowak (2006) found similar results. Urban forest plot data as well as air pollution and meteorological data were used in a predictive modeling tool to determine pollution removal, carbon sequestration, and impacts to water quality. Furthermore, a number of species specific allometric equations were used to measure the "root to shoot" biomass of each tree measured in the sampled plot. The author concludes that urban trees play a large role in removing pollutants, sequestering carbon, and improving water quality (all of which has very real monetary value) in 13 large cities in the U.S. as well as Toronto and Beijing. The author also argues that urban forestry should be seen as a biotechnological way to improve the urban environment (Nowak 2006).

Given the many benefits of urban forests and orchards, the conclusions of Wolf and Kruger (2009) are significant because they find that public appreciation and understanding of the benefits of urban forestry was lacking. Interestingly, the researchers also find that community engagement and stewardship should be encouraged to preserve and improve the human and economic benefits of urban forest spaces (Wolf and Kruger 2009). These findings are important because they demonstrate that the public does not fully appreciate the benefits of urban forests and that greater public appreciation of urban forests would lead to more environmental stewardship and a stronger dedication to maintaining urban forests.

Urban orchard stewards are not only participating in fruit tree maintenance, they also demonstrate to the public that food production can be one of the many benefits of the urban forest. The urban orchard stewards raise awareness about the benefits of urban forests and the practical benefits of urban agriculture. The following section will provide a more thorough review of the definitions and practical implications of urban agriculture.

Urban Agriculture in the U.S.

The term "urban agriculture" has been used rather loosely up to this point in this report and should therefore be defined in greater detail. Urban agriculture can be defined very broadly. Any food being grown and harvested in any manner in a non-rural environment can be considered urban agriculture. The utilization of any space for growing food, no matter how small, can be an important contribution to the diet of a person, family, or community. Luc Mouget (1999) writes, "urban agriculture, including food production, is typically practiced over smaller and more dispersed areas than rural agriculture, uses land and water more sparingly and efficiently, integrates systems more effectively, and produces much higher yields and more specialty crops and livestock" (International Development Research Centre 1999, pg. 16).

A more specific definition of urban agriculture is: "the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities" (Katherine H Brown and Carter, 2003, pg. 3). These definitions of urban agriculture allow for a large variety of practices that include the management and stewardship of urban orchards. It is also important to stress that even public properties fall under the large umbrella of urban agriculture and should be considered areas of great potential for growing and raising food to support their communities.

The following brief description of two recent studies on urban agriculture in the U.S. highlights the typical spatial distribution of urban agriculture as well as the potential for food self-sufficiency in modern American cities. In a study examining urban agriculture spaces in Chicago, Taylor and Lovell (2012) used remote sensing data to map public and private urban agriculture spaces. Food producing gardens were found in a

wide range of places across Chicago. Vacant lot gardens were concentrated in economically disadvantaged neighborhoods, home gardens were concentrated in areas where households had larger yard spaces for gardening, and the majority of residents do not live in a Census tract with a community garden—a trend that is most apparent in economically disadvantaged areas of the city. The researchers found that the majority of urban agriculture spaces in Chicago were on private property, which would suggest that there is a potential for a greater investment in urban agriculture if more public spaces were devoted to growing food.

Similarly interested in the potential for urban agriculture, Grewal and Grewal (2012) examined the scenarios by which different land uses could result in food self-reliance in Cleveland. The authors conclude that Cleveland's current self-reliance in food is between 1.7% and 0.1%, and that with particularly intensive gardening techniques and the use of commercial rooftops and more private garden spaces the city could reach 100% in fresh produce, 94% in chickens, and 100% self-reliance in honey. The authors argued that because food self-reliance is technically possible, more attention should be paid to unused urban spaces for urban agricultural purposes. The authors did not include available public lands such as parking strips and open spaces in city parks, which suggests that Cleveland's potential for food self-reliance would only increase with the inclusion of these spaces.

Taylor and Lovell (2012) make the important contribution of mapping existing community gardens, but the authors fail to explore the potential of the unused public spaces in Chicago. Similarly, Grewal and Grewal (2012) ignore public spaces such as parking strips and open spaces in city parks in their modeled estimates of the food growing potential of Cleveland. A reasonable conclusion is that the potential for urban

agriculture would be far greater if public spaces, such as Seattle's urban orchards, were recognized and included in urban food management plans. As Stephanie Butow, a volunteer urban orchard steward at the Picardo P Patch pointed out:

> Also, I'm a social worker and I work with elementary school kids and there are a lot of kids who don't have enough food. And it just really frustrates me because when you look at all the land that is available. Because even just all along the city streets, if they planted fruit trees instead of grass, there would be a lot of fruit available for [the hungry]. (Butow, personal interview 4 Feb. 2013)

Once individuals begin growing even a small amount of their own food, they become much more aware of the many open spaces that could more efficiently be utilized for growing food to help the food insecure. Finding a legal and safe way of utilizing some of these unused spaces is one of the major challenges facing urban agriculture. City Fruit's urban orchard stewardship program is actively engaged in challenging the boundaries of suitable spaces for growing food in urban environments. Furthermore, volunteer urban orchard stewards are actively demonstrating the role that everyday people can take to help care for public goods and feed the hungry. The following section will go into much more detail about food security and demonstrate the need for community-based programs such as City Fruit's urban orchard stewardship program.

Food Security in Washington State

One of the major goals of City Fruit is to use and share otherwise wasted food in order to "effectively link those who have fruit with those who need it" (City Fruit 2013). Every year City Fruit delivers many thousands of pounds of fruit to numerous organizations, including but not limited to: a large number of food banks, retirement communities, shelters for battered women, summer camps, church groups, and cooking

classes for the W.I.C. (Women Infants and Children) program. Food security is a major problem in Seattle and City Fruit is among many organizations dedicated to helping feed the needy. The following section provides some information on the state of food security in the U.S. and demonstrates the need for programs like City Fruit's urban orchard stewardship program.

Urban agriculture has the potential to help alleviate hunger and bolster the food security of the urban poor. Hunger and poor nutrition are not problems of the developing world that the United States can ignore. Hunger is a problem the world over, including in wealthy countries, and policy makers in the United States should recognize that a significant number of Americans suffer from hunger. Hunger is closely linked with poverty, and according to the U.S. Census Bureau, there are many poor people in the U.S.:

> The nation's official poverty rate in 2010 was 15.1 percent, up from 14.3 percent in 2009 ─ the third consecutive annual increase in the poverty rate. There were 46.2 million people in poverty in 2010, up from 43.6 million in 2009 ─ the fourth consecutive annual increase and the largest number in the 52 years for which poverty estimates have been published. (US Census Bureau 2012a)

The numbers for shared households and individuals in Washington State are even worse. As of 2011, 464,673 shared households (17.7%) and 775,510 additional individuals (15.2%) were at or below the poverty level (US Census Bureau 2012b). The poverty threshold for a single person in the U.S. is $11,139 (US Census Bureau 2012a).

Although the thresholds are higher for families and people with children, being at or below the poverty line is an incredible strain on millions of Americans and can lead directly to food insecurity. According to the United States Department of Agriculture's "Economic Research Service," 14.70% percent of

households in the U.S. and 15.4% of households in Washington State experienced 'low or very low food security' at some point between 2009-2011 (USDA 2012). If such high levels of poverty in the United States remain steady, or indeed continue to grow, the need for urban agriculture will only become more apparent.

Any increase in poverty at the individual, family, or community level weakens a person's ability to purchase an adequate amount of nutritious food. Hunger is a symptom of poverty, and despite a public image of obesity, the United States has a lot of hungry citizens. Those that are food insecure are: "people who frequently skip meals or eat too little, sometimes going without food for a whole day. They tend to have lower quality diets or must resort to seeking emergency food because they cannot afford the food they need" (Brown and Carter, 2003). Food expenditures are a burden to millions of Americans. Buying enough food, and particularly food that is healthy, is a daily struggle for those lacking food security. Urban agriculture and urban orchardry should be viewed as a way to relieve this burden and as an acceptable avenue for the poor to receive more 'emergency' food that would only otherwise be distributed by government or non-profit agencies at great cost to other people.

When the demographics of who goes hungry in the United States are examined, the inequities of American society are all too apparent. Minorities and the young are the most at risk for experiencing hunger. According to Patricia Allen: "Many of the hungry are children, and 76% of the hungry are people of color" (International Development Research Centre 1999, pg. 178). These figures become even more striking when you learn of the true magnitude of the problem. Allen argues that, "Food security eludes the estimated 30 million Americans who suffer chronic underconsumption of adequate nutrients" (International Development Research Centre 1999, pg. 178). Thirty million

may be a conservative estimate of the number of people that do not have food security. Gorgolewski argues that, "a total of 50 million Americans were food-insecure in 2007, including more than 17 million children" (Gorgolewski, 2011).

According to the Food Bank for New York City: 48% or 3.9 million people in New York City had "difficulty affording food" during 2008 (Quets and Spota, 2011). This amazing failure of the United States illustrates that the American food system is fundamentally flawed and illustrates how important community level programs such as City Fruit's urban orchard stewardship program are to addressing food insecurity. The following section will go into more detail about the relationship between environmental stewardship groups (like City Fruit) and local governments, and describe how they work together to manage public spaces.

Civic Engagement of Environmental Stewardship Groups

A number of studies have examined the relationship between nonprofit environmental stewardship organizations, such as City Fruit, and the management of urban green spaces and other public goods and found that nonprofits play an integral role in maintaining public goods. Pincetl (2003) examined the relationship between local government and nonprofits in Los Angeles and concluded that nonprofits play an important and growing role in park management. Through an analysis of historical park provision, current newspaper and park bond documents, and interviews with experts related to the field, the author concludes that nonprofits have become partners with local governments and important players in the governance of the area. Environmental nonprofits have also become leaders in finding new sources of funding that are necessary given the financial situation of cash-strapped local governments (Pincetl 2003). In a

related article reviewing the literature about park management in Los Angeles, Pincetl (2010) examines a tree planting program in Los Angeles in the context of the sustainable management of urban areas. The author concludes that private stewardship groups have assumed the responsibility for the daily management, maintenance, and fundraising support of many city parks (Pincetl 2010).

A number of studies have looked more closely at the environmental management relationship between private organizations and local governments (Connoly et al. 2012, Svendsen and Campbell 2008, Young and McPherson 2012). In each, collaboration between the groups is stressed. Svendsen and Campbell (2008) conclude that although the stewardship groups in their study are of various sizes and funding levels and are dedicated to different agendas and goals, they all depend heavily on volunteers and often collaborate with the agencies responsible for the management of urban ecological services. The authors conclude that the most commonly cited barriers to organizational success and growth is lack of adequate financial resources (Svendsen and Campbell 2008). Connoly et al. (2012) describe this as a bi-modal relationship between the stewardship groups and public agencies. The relationship is one of convenience for both sides and often concludes in either contentious or cooperative results for both parties. The authors also find that the stewardship groups participating in one or more of these bi-modal partnerships can be distinguished from simple ecosystem managers because they are often responding foremost to social conditions, with improvements to environmental services a secondary (yet still important) concern (Connoly et al. 2012). Interestingly, Young and McPherson (20120 found that the majority of public, private, and community stakeholders identified their local governments, and the management strategies of their respective mayors in particular (but not private or community groups), as having the

greatest influence on the management of urban green infrastructure.

Partnerships between community stewardship groups and local governments manifest themselves in a number of ways and are increasingly challenging the legal boundaries of urban agriculture and the use of public spaces. In a review of existing fruit gleaning groups and the legal environment for such projects in Seattle, McLain et al. (2012) reviewed all of the relevant city documents and websites of urban fruit harvesting organizations and conducted 15 semi-structured interviews with a number of community gleaning organizations, urban forest conservation organizations, and with employees of the Seattle City Council and Departments of Neighborhoods, Planning and Development, Transportation, and Parks and Recreation. The authors conclude that the traditional views of parks services to the public are rapidly expanding to include parks and open spaces as areas of production.

Urban community gleaning organizations (including City Fruit's urban orchard stewardship program) and forest conservation organizations are working in partnership with the City of Seattle in their efforts to produce edible food for those suffering from food insecurity in Seattle. While most of this activity has occurred on private land, volunteer orchard stewards working for City Fruit are now maintaining a number of remnant orchards on public lands and their work is expanding the definitions of urban environmental stewardship and changing the way parks and open spaces are viewed (McLain et al. 2012). The following section will describe City Fruit, and the orchard stewardship program in particular, in greater detail.

City Fruit

City Fruit is well known for its harvesting program in the Phinney Ridge neighborhood, South Seattle, and West Seattle. Over the last several years City Fruit has successfully harvested many thousands of pounds of unused fruit from trees growing on private property that would have otherwise gone to waste. This harvested fruit is donated to several organizations that feed the under-served. According to the City Fruit website: "City Fruit promotes the cultivation of urban fruit in order to nourish people, build community and protect the climate. We help tree owners grow healthy fruit, provide assistance in harvesting and preserving fruit, promote the sharing of extra fruit, and work to protect urban fruit trees" (City Fruit 2013).

The goals of City Fruit are as follows: conservation and preservation of fruit trees on public and private properties, preservation of the urban tree canopy which includes increasing the number of fruit trees planted on public and private properties, stewardship to improve the care of fruit trees and reduce the impacts of fruit pests and diseases using non-toxic methods, increasing the amount of harvested fruit, making sure that the fruit is used and shared by those who need it, and community building through strengthening the "connections within community groups through planting, stewardship, harvest and/or preservation of fruit" (City Fruit 2013). More recently however, City Fruit has started an orchard stewardship and has organized groups of volunteers interested in maintaining fruit trees growing on public lands.

In order to more properly care for fruit trees growing on public lands (i.e. public goods), City Fruit began its orchard stewardship program in 2010. Groups of dedicated volunteer stewards receive training in fruit tree care and maintenance in order for them to help maintain remnant orchards on properties owned by the City of Seattle. The orchard

stewardship program has a different mission than City Fruit's harvesting programs oriented towards private property fruit trees in that the program is intended to "train and encourage community investment in fruit tree maintenance on publicly owned property. The Fruit Tree Stewards program indicates that urban environmental stewardship is taking place across wild and cultivated natures on both private and public property in Seattle" (McLain et al. 2012). McLain et al.'s (2012) central argument is that organizations like City Fruit are actively engaging in a blurring of the harvesting boundaries between public and private urban spaces and promoting public spaces for urban agriculture and gleaning purposes.

The orchard stewardship program greatly expands City Fruit's presence on the urban landscape of Seattle, thereby increasing its outreach to the public and forcing greater dialogue and activism about the legal realities surrounding urban agriculture. According to McLain et al., the results of these collaborations "foster dialogue between food policy and urban forestry advocates, and further blur perceptual boundaries between wild and cultivated areas" (McLain et al. 2012, pg. 6). Perhaps a more important result of the orchard stewardship program is that it simply demonstrates that fruit is and can be grown in unconventional urban areas: "Often fruit goes unused because people are not sure when to harvest it, how to eat it, or they are put off by damage caused by preventable disease and pests. We are reclaiming the urban orchard, showing people how to harvest and use what they need, and to share the rest with others" (City Fruit 2013). In addition to providing necessary maintenance services for the orchards, the stewards are also demonstrating that public spaces can be utilized for growing and harvesting fruit.

The orchard stewardship program began from a simple need to maintain fruit trees growing in Seattle parks. In 2012, Seattle's Department of Parks and Recreation created

a website titled Urban Food Systems as a resource for those curious about the opportunities for urban agriculture on parks properties. A link to City Fruit is provided on the site, as is the following brief description of the City's goal for the urban orchard stewardship program: "to work with communities to better care for and nurture existing fruit trees on Parks property" (City of Seattle 2012b). The City of Seattle and the DPR are sorely underfunded and are not able to provide the level of maintenance that fruit trees require. Before the orchard stewardship program was started, many if not most of the fruit trees on public lands were highly degraded, had not been pruned or cared for in years, and were often overgrown with non-native invasive species.

The orchard stewardship program was born out of necessity and a need to maintain a public good and return the fruit trees to productive order. According to City Fruit's website:

> While these trees are of value to the community as a source of food and canopy cover and as a link to Seattle's past, Seattle Park's landscaping budgets cannot cover the costs of the pruning, pest management and harvest of fruit trees. City Fruit was awarded a grant from the Washington State Department of Natural Resources in cooperation with the US Forest Service to develop a community stewardship program to care for fruit trees in Seattle parks. (City Fruit 2013)

Gail Savina, the Director of City Fruit, related to me that the Washington State Department of Natural Resources has funded the orchard stewardship program through three one-year funding cycles: "we received a grant for $9800 in 2010-11. Another grant for about $9500 for 2011–12. And now we just received a grant for $9900 starting in 2013" (Personal Communication, 4 Feb. 2013). The Urban and Community Forestry Program at the Washington State Department of Natural Resources is responsible for funding community urban forestry programs across the state. The mission statement of the program is as follows: "to educate citizens and decision-makers about the economic,

environmental, psychological, and aesthetic benefits of trees and to assist local governments, citizen groups, and volunteers in planting and sustaining healthy trees where people live and work in Washington" (Washington State DNR 2012). The City of Seattle, the Washington State Department of Natural Resources, as well as City Fruit all share similar goals and are dedicated to improving the health and productivity of urban fruit trees.

The number of orchards currently managed by stewardship groups in Seattle is steadily growing. Gail Savina provided a working list of the nine orchards that have had steward groups established. In the first year of the program Bradner Gardens, Burke Gilman Trail, Dr. Jose Rizal Park, Martha Washington Park, and Meadowbrook Park were established. In the second year of the program steward groups were started in Queen Pea P Patch, Picardo P Patch, Kirke Park, and Meridian Park (Please refer to Figure 1 below to view park locations). In the next year the program is expected to expand to another four parks. It should be noted that City Fruit is no longer associated with the stewardship group in Meadowbrook Park and although a group was trained for Kirke Park the program was abandoned at this site due to park remodeling (Personal Communication, 4 Feb. 2013).

Incomplete lists of the stewarded orchards can be found on both City of Seattle and City Fruit websites (City of Seattle 2012b, City Fruit 2013). That the records have not been able to keep up with the growing program is a reflection of the struggle for resources and funding facing both the City of Seattle and City Fruit. However, City Fruit's website does provide in-depth descriptions of the first seven orchard stewardship locations that are still associated with the program, including site descriptions and history, locations shown on a map, and complete fruit tree inventories (City Fruit 2013).

The City of Seattle provides a website that displays an alphabetized list of all of the parks managed by Seattle's DPR with links to individual park pages that present brief historical accounts of each park as well as the current amenities offered at each park location (City of Seattle 2013). These individual park descriptions do not make any mention of the orchards being maintained by volunteer orchard stewards. Only City Fruit provides detailed inventories and descriptions of the urban orchards on park properties.

Map of City Fruit's Orchard Locations

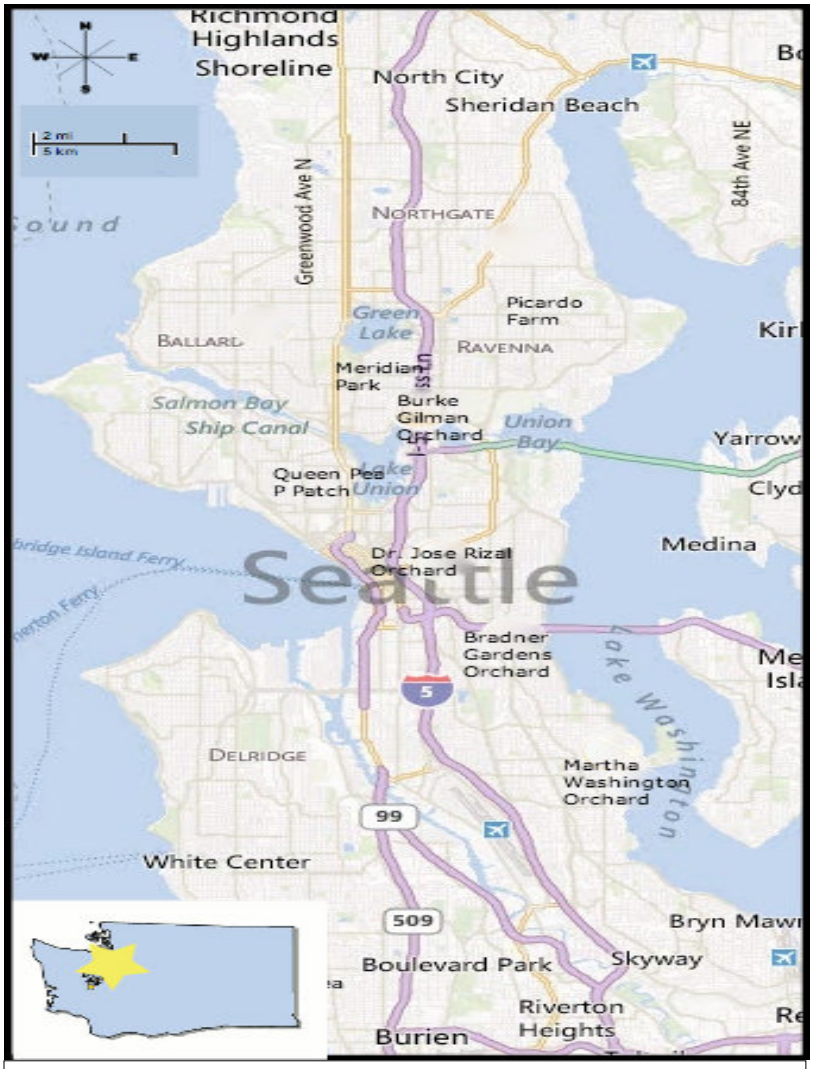

Figure 1. Approximate locations of all current City Fruit orchards. (original map taken from City Fruit 2013 and altered by author)

For example, the orchard inventory at Bradner Gardens is as follows: “In addition to an historical apple tree, Bradner hosts and espalier apple along its southern fence and several columnar apples, a crabapple, blueberries, and a new (2010) Jam Session plum” (City Fruit 2013).

Since a group of stewards has been organized to maintain the orchard along the Burke Gilman Trail at the North end of Lake Union, monthly work-parties have uncovered more than twenty-five fruit trees. The first fruit trees uncovered along the Burke Gilman Trail were identified as: Common Delicious, Golden Delicious, Hawkeye Delicious (an heirloom variety), an undetermined Delicious, and crabapple (City Fruit 2013). As a final example, the inventory of the orchard at Dr. Jose Rizal Park at the North end of Beacon Hill is as follows: “The orchard contains more than fifteen apple trees, including a stand of winesaps, fifteen crabapples and a black walnut” (City Fruit 2013). Winesap apples are also an heirloom variety, which along with the Hawkeye Delicious apple tree in the Burke Gilman Trail orchard demonstrate both the age of the trees as well as the horticultural knowledge of whomever planted the fruit trees in the first place.

City Fruit provides training workshops on fruit tree biology and maintenance that provides the stewardship groups with the education and experience necessary to care for the orchards. The training is composed of three separate lectures on basic fruit tree biology and fruit production, pruning, and pest management with an added permaculture component (City Fruit 2013). After the more than 30 volunteer orchard stewards have been organized and trained, they are mostly left to their own devices to manage the orchards as they see fit. The volunteer orchard stewards are a diverse group with varying levels of experience with fruit trees. Some of the stewards are brand new to fruit tree

maintenance while others have been working with fruit trees and (sometimes the very trees they are now officially stewarding) for years. In addition to the extensive pruning maintenance the fruit trees require, the specific accomplishments of the many orchard stewards include: "hold cider parties, pull blackberries and ivy, spread zoo-doo, mulch, harvest, and create policy around their orchards" (City Fruit 2013). Apart from the City of Seattle regulations about tree maintenance, including a ban on all pest control and fertilizer applications and a restriction on the use of ladders by volunteer stewards (often unenforced), the City of Seattle leaves much if not all of the management of the orchards to the stewardship groups. However, the Seattle DPR does provide assistance when staff and large equipment are needed to perform renovation pruning, provide mulch, and to haul away brush (City Fruit 2013). The volunteer orchard stewards therefore are often left with a level of autonomy that is unusual for volunteers working on public properties and managing public goods.

This chapter demonstrates that urban orchard stewardship is a very complicated issue. There is a long history of parks management and city regulations that dictate the use and purpose of public spaces. The positions of the City of Seattle and its departments as well as the city council are changing and the legal landscape is slowly evolving in favor of urban agriculture and urban orchards. Urban orchards are a public good that provide many environmental and social benefits to the City of Seattle. Urban orchards contribute to the benefits provided by the urban forest and produce a large amount of highly nutritious fruit that is used to address the problems associated with food security in Seattle. The following chapter will present the major findings of this research project as well as the specific methods of qualitative research and data analysis that were employed.

Chapter 4: Data Analysis

This chapter presents the results of eight in-depth interviews with volunteer orchard stewards and program managers that were performed for this study. The qualitative research methods and the procedures for analyzing the data that were employed in this study are described in detail. The specific research question that guided this study is: what influences the decision of volunteers to join and continue to participate in urban orchard stewardship programs? Also of interest, how do the volunteers determine if the programs are successful and what recommendations do the volunteers have for improving the program? Not only were some of the specific motivations for volunteer orchard stewardship identified, but a number of other meaningful conclusions were made related to urban orchard stewardship programs, volunteering, and the budgetary issues facing both the City of Seattle and City Fruit. As a result of this study, urban orchard stewards were found to be motivated by the opportunities to learn about fruit tree maintenance and fruit production, a love of gardening and caring for fruit trees, the opportunity to interact with their community, and a need to improve public safety. The program managers all spoke extensively about the funding difficulties facing the City of Seattle and City Fruit as well as the important role that the orchard stewardship program plays in the community.

The research methods used in this study rely upon in-depth interviews with four volunteer urban orchard stewards, two representatives from the City of Seattle's Department of Parks and Recreation, an employee of the State of Washington's Department of Natural Resources, and the Director of City Fruit. The questions varied

depending on whether the interviewee was a volunteer or a working professional. When interviewing volunteer orchard stewards, the following set of questions were used:

1. Can you briefly describe the orchard stewardship program and what you do for it to me?
2. How long have you participated in the program?
3. Do you make any personal sacrifices in order to participate in the program?
4. Are there any personal benefits to participating in the program?
5. Why do you participate in the program and are some reasons more important than others?
6. How long do you intend to participate in the program, and what influences this decision?
7. In your opinion, what are the overall goals of the orchard stewardship program and have you been able to meet these goals?
8. Where do you see the program in ten years?
9. Is the program lacking in any way? If so, are there any improvements that you would like to see to the program?
10. What is your favorite part about participating in the program?
11. What is your least favorite part about participating in the program?
12. Is there anything else you would like to tell me about the program or your involvement?

When interviewing representatives of local government or City Fruit, the following set of questions were used:

1. Can you describe the orchard stewardship program for me? What are its overall

goals? And how would you describe your role in the program?

2. Have the goals of the program been met?
3. Where do you see the program in ten years?
4. What are the benefits and drawbacks of relying primarily on volunteer stewards? Are volunteers best suited for this work or would you rather rely on paid staff?
5. Can you describe the relationship between the Department of Parks and Recreation and the volunteer stewards?
6. What does the City of Seattle get out of the program?
7. What do you think motivates the volunteers to participate?
8. What is the best way to ensure that volunteers are committed and remain in the program?
9. Do you think the program is having an effect on the legal landscape of using public spaces for urban agriculture?

Furthermore, a number of follow up and more targeted probing questions were used during every interview when needed to elicit more detailed responses.

The interviews were conducted between December 2012 and February 2013. All but one of the interviews occurred in Seattle, which occurred in downtown Olympia. The locations for the interviews were chosen by the participants and ranged from places of work to more public locations like coffee shops and the orchards where the stewards volunteer their time. Two interviews were conducted on February 4, 2013 during a steward group work party at the Picardo P Patch orchard. The interviews lasted a half an hour on average, but sometimes were shorter or longer according to the time restrictions of the participants.

The interviews were all recorded with a digital audio recording device and transcribed onto a computer with a word processor. Once the transcriptions were complete an initial review of the texts was performed. The interview transcripts were then analyzed for dominant and recurring themes. Particular categories and themes that fit within the texts were identified and coded in order to recognize the dominant themes of the respondents. When possible, the most commonly used words or phrases were identified to further help determine the dominant themes of the respondents.

Results from Interviewing Volunteer Urban Orchard Stewards

Similar to the results of many of the studies presented in the literature review, the results of this study indicate that volunteer urban orchard stewards are motivated by a variety of concerns. Each volunteer described a different and unique motivation, including both self-interested as well as altruistic motivations, when they were asked why they chose to participate in the program. For example, Matt Maria—an orchard steward volunteering at Bradner Gardens Park—responded to the question about motivation with the following: "I mainly wanted to learn more about how to take care of fruit trees" (Maria, Personal Interview 29 Jan. 2013). Stephanie Butow—an orchard steward volunteering at Picardo Farm P-Patch—responded differently to the same question: "I love to garden. If I could garden all the time I would be really happy. And I want to help people" (Butow, Personal Interview 3 Feb. 2013). The responses of Mr. Maria and Ms. Butow to the question about why they participate clearly demonstrate that volunteer orchard stewards are motivated by self-interests including growing fruit and continually gaining new experiences and insights into successful fruit tree production. Ms. Butow's

response: “And I want to help people” also indicates that the volunteer orchard stewards are motivated by altruistic concerns as well.

Trent Elwig—an orchard steward also volunteering at the Picardo Farm P-Patch—is motivated by being part of an important community project. When asked why he chooses to participated in the program, Mr. Elwig responded with the following: “So I guess I can't really put it into words, and I'm probably not going to be able to, but just that emotion or feeling, maybe being part of something that back at the house that I rent I am not part of” (Elwig, Personal Interview 3 Feb. 2013). It is clearly important for volunteers to feel like they are participating in something that is larger than their own efforts and that the implications of their work extend beyond the everyday volunteer tasks that they perform. Volunteers that are not able to realize the importance of their participation or gain a sense of accomplishment in their work will not be motivated to continue dedicating their time and efforts to an unrewarding volunteer experience.

Another altruistic concern that motivates some volunteer orchard stewards is public safety. Describing his work over the last decade at the Dr. Jose Rizal Park, volunteer orchard steward and recipient of the 2012 Denny Award (which recognized the volunteer work done by individuals and organizations for Seattle Parks and Recreation) Craig Thompson described the work that he and other orchard stewards have done to reclaim the park that had previously been overgrown by non-native invasive species and been home to a dangerous drug trade that threatened the local community and prevented people from enjoying the park. According to Mr. Thompson, “I got involved in this program as a means to get more varied use of this area [...] the more people that come here, the safer it is and the more it becomes established as a park” (Thompson, Personal

Interview 25 Feb. 2013). Through their efforts the volunteer orchard stewards and forestry volunteers have opened up Dr. Jose Rizal park and it is presently a much safer public space than it was only a few years ago. When asked why he continued to participate in the program since he was able to realize the goals that motivated his initial participation, Mr. Thompson responded that in addition to the leadership skills that he has learned through his participation: "I would say that I like the apples, I like working with people" (Thompson, Personal Interview 25 Feb. 2013). The aforementioned findings about the motivations for volunteer orchard stewardship suggest that the volunteers are motivated by a number of considerations. Volunteer organizations would be wise to recognize that volunteers may be motivated by diverse and vastly different set of considerations and know that not all volunteers will respond to the same calls for participation.

The volunteers' responses to a number of other questions revealed more of their personal motivations for participating in a volunteer urban orchard stewardship program. When the volunteers were asked what their favorite part about participating in the orchard stewardship program was, a common theme of the respondents was that they enjoyed the opportunities the program afforded them to participate with other people, work in teams, and form relationships with other orchard stewards. Mr. Maria's response was as follows: "I guess just the opportunities that I am afforded to talk to people and learn from people in the food system's world" (Maria, Personal Interview 29 Jan. 2013). Ms. Butow and Mr. Thompson gave similar responses: "Well my most favorite part is the team. And working together and creating edible fruit. It is so cool when it is harvest time" (Butow, Personal Interview 3 Feb. 2013), "The people that I have gotten to know"

(Thompson, Personal Interview 25 Feb. 2013). Mr. Elwig was the only respondent to not respond in a similar fashion to the question about their favorite part of participating, but in response to the question which asked if there were any personal benefits to participating Mr. Elwig responded: "It's good exercise, you get to be out is the sun. I've got plenty of community members down here that I get to see, stop by and chat with" (Elwig, Personal Interview 3 Feb. 2013). All of the volunteer orchard stewards clearly value the opportunities to interact with their fellow orchard stewards as well as the greater community. Volunteer managers should not overlook the importance of this finding and volunteer efforts should be structured in a way that ensures that the volunteers are able to fulfill whatever desire they have for social interaction.

Volunteer stewards lead busy lives and can leave the program at any time. In order for the urban orchard stewardship program to continue to be successful it is important for current volunteers to try to recruit new stewards that will continue the work in the future. When asked how long he intended to participate in the program, Mr. Maria responded that he intended to stay in the program for at least another year. Mr. Maria also recognizes the importance of continued stewardship and admitted that he has so far been unsuccessful in ensuring that he will not be missed when he chooses to stop stewarding the orchard at Bradner Gardens Park. According to Mr. Maria: "Certainly on of the goals is to continue stewardship and I'm not as worried here because this place is pretty well taken care of and people are attracted to this place. But, I personally haven't done anything to get new people that are excited about taking care of these particular fruit trees" (Maria, Personal Interview 29 Jan. 2013).

The participation of volunteer orchard stewards can end due to particular life

circumstances that make it difficult to continue, as is the case with Mr. Maria, but volunteers can also stop participating if they feel like they are not being treated fairly or with enough respect. At the time of her interview Ms. Butow was in the middle of a struggle with the Department of Neighborhoods (which have management control of urban orchards, such as Picarado Farm P-Patch, that are on p-patch properties). According to Ms. Butow, despite her many hours working in the orchard, the Department of Neighborhoods was trying reduce her number of garden plots at the p-patch. Ms. Butow was very upset over the situation and when asked where she see's her program in ten years she replied:

> Well, who knows? Because I don't know if I am going to be continue to be involved. Because I was here practically every day last summer and you know nobody is paying me to do that. And I had good feelings about doing that because I wanted to give back. But with this recent turn of events it's just like I don't even want to be here.
> (Butow, Personal Interview 3 Feb. 2013)

Later in the interview, when asked if she makes any sacrifices to participate in the program Ms. Butow replied: "Well not being paid, it really doesn't bother me so long as I'm treated with respect and appreciation. I don't do it to get paid. I do it because I love it" (Butow, Personal Interview 3 Feb. 2013). The participation of volunteer orchard stewards clearly depends not only on personal life circumstances but also how they are treated within the program. Volunteers want to feel like they are appreciated and respected and the City of Seattle as well as City Fruit would be wise to avoid alienating the volunteer orchard stewards.

As has been previously mentioned, one of the primary research questions of this study was to determine whether the volunteers could provide any recommendations for

how to improve the urban orchard stewardship program. Two of the respondents, Mr. Elwig and Mr. Maria did not believe the program was lacking or in need of improvement. Mr. Maria said: "As far as I can say, it is not lacking" (Maria, Personal Interview 29 Jan. 2013).

Both Ms. Butow and Mr. Thompson gave responses that indicated that they believed the program was lacking in financial resources and that they would like more support from the City of Seattle. According to Ms. Butow: "It would be nice if there was a little bit of a budget so that we could get things that we might need, but it's not necessary. If you get enough people together you can pool your resources and accomplish" (Butow, Personal Interview 3 Feb. 2013). Mr. Thompson gave a similar response and recommends that the City of Seattle should absorb the management and maintenance duties of public orchards into its forestry programs so that more public money and volunteer efforts can be devoted to the orchards:

> I think that needs to be addressed so that Parks and Recreation looks at stewardship programs as being one program with several facets as opposed to seeing them as separate pieces. That it would benefit the programs as a whole and also make it possible to better use facilities and resources at a time when those facilities and resources are constrained for budgetary reasons. (Thompson, Personal Interview 25 Feb. 2013)

Not only is funding important, but the nature of the work that volunteer orchard stewards are asked to do is also important for retaining committed stewards. When asked about his participation, Mr. Elwig spoke about how it is important to make sure that the volunteer stewards are not asked to do too many dreary tasks that can cause volunteers to burn out. While not providing a direct recommendation for improving the orchard stewardship program, Mr. Elwig's response does provide some insight into how to retain volunteers:

"You know how community volunteer efforts go, if it takes a lot of un-fun things to do it's probably not going to get done" (Elwig, Personal Interview 3 Feb. 2013). These responses indicate that even though some of the volunteers were not able to provide any recommendations for improving their orchard stewardship program at least some of the City Fruit volunteers recognize that more resources and lively tasks would allow the volunteer program as well as the City of Seattle to be more successful in caring for the urban orchards.

Results from Interviewing Program Manager Respondents

Two major themes were found in the responses of the four program manager respondents. The respondents all were very concerned with funding issues and the financial situation of both the City of Seattle as well as City Fruit. City Fruit's urban orchard stewardship program was viewed by all of the program manager respondents as an inexpensive means of ensuring fruit tree maintenance that would otherwise have been left undone. The program manager respondents also all stressed the importance that programs such as City Fruit's urban orchard stewardship play in the community. The work that the orchard stewards perform is viewed as an integral part in community building that strengthens the connections between community members as well as between the community and local government. The following discussion presents these findings in greater detail.

When asked how important volunteer stewards are for managing urban forests Ms. Foster, the Urban and Community Forestry Program Manager for the Washington State Department of Natural Resources, replied: "To the local level it is critical. And most of

our community forestry programs really couldn't exist without volunteers" (Foster, Personal Interview 16 Jan. 2013). The two employees of the City of Seattle's Department of Parks and Recreation that were interviewed for this study share this opinion. When asked to describe the main goals of the orchard stewardship program Bob Baines—a Ground Maintenance Crew Chief at Seattle Parks and Recreation—replied: "Park staff really...our budget doesn't include specialty maintenance of fruit trees. Successful fruit trees require additional maintenance, so the idea behind the orchard stewardship program is to set up a system where we have volunteers to do this" (Baines, personal interview 3 Jan. 2013). According to Ms. McElroy—an employee of Seattle Parks and Recreation-Westbridge: "I don't think the department has put a lot of resources into caring for the [fruit] trees. So without the community stewards, the volunteers, they would just kind of be there and not cared for" (McElroy, Personal Interview 3 Jan. 2013).

When asked about the benefits of relying of volunteers the program manager respondents stressed that volunteers are an essentially free source of labor and are able to perform the maintenance work that the City of Seattle is not funded to do. Ms. McElroy said, "Volunteers provide an amazing amount of care for the properties that we would just not be able to afford otherwise" (McElroy, Personal Interview 3 Jan. 2013). This maintenance work that the volunteers are performing has particular significance for the life span of the fruit trees. According to Ms. Foster, when urban trees are not maintained they fall into such disrepair that they are not able to provide the services that are expected of them and they become a liability. Ms. Foster argues: "If you don't take care of them [urban trees], they are not going to give you the benefits. And as soon as trees start causing problems more and more are removed" (Foster, Personal Interview 16 Jan. 2013).

The volunteer orchard stewards are maintaining the urban fruit trees at no or very little cost to the City of Seattle, therefore ensuring that the trees continue to be a public good to the community rather than a nuisance or liability. The orchards would not exist without the efforts of the volunteer stewards.

Not only is the City of Seattle facing a budget shortfall, but City Fruit too is not funded at the level that is necessary to ensure the continued stewardship of the urban orchards. When asked where she thought the program would be in ten years, Ms. Savina replied that the Department of Natural Resource Grants are not enough to sustain the program over a long-term period of time (please see the Description chapter for further detail about the grants that fund the orchard stewardship program). The continued success of the program depends upon either a more consistent source of future funding or a change in management strategy where the City of Seattle would assume more of the management responsibilities of the orchards. According to Ms. Savina: "who's going to pay for what it costs to really run a stewardship program? Is it going to be the general public or is it going to be agencies or is it going to be some sort of cost sharing?" (Savina, Personal Interview 30 Jan. 2013). When asked whether the program could support itself without future funding Ms. Savina responded that the program would have a hard time sustaining itself:

> We are going to lose stewards. People lose interest or they move. Things happen. So to keep new stewards coming in and interested, and keeping them trained and knowledgeable. And just keeping the interest level is really the issue. So if there are no inputs in two or three years I can see it dying just kind of in a natural slow way.
> (Savina, Personal Interview 30 Jan. 2013)

The City of Seattle as well as City Fruit are cooperating and trying to figure out a way to

make the current orchard stewardship program more sustainable. There is a clear need for more money, and until future sources of funding are found the program is going to continue to rely upon the work of volunteer orchard stewards.

Another theme that was identified throughout the interviews with the program managers was the important role that the orchards and the orchard stewards play in the community. The activities of the volunteer orchard stewards are very public. Whether the orchard stewards are working on the fruit trees, staging cider press fundraisers, or soliciting additional help from interested passing community members, the orchards and their stewards play an important role in introducing new community members to each other. When Mr. Baines was asked about the benefits of relying upon volunteers, he responded that the work of the volunteer orchard stewards help to strengthen their communities:

> So wherever we are doing it we have volunteers in the community that are speaking with their neighbors and soliciting additional volunteers. They keep an eye on the site. They provide assistance with the harvesting and distribution. I think the whole idea of these orchards is that they are really assets to the community and connecting the community is an important part of their success. (Baines, Personal Interview 3 Jan. 2013).

Ms. Savina had a similar yet slightly different take on the same question about the benefits of relying on volunteers. According to Ms. Savina, the actions of a dedicated group of volunteer orchard stewards results in a stronger connection between the community and their publicly owned park and green spaces. Ms. Savina argues: "I think that by having volunteers, there is something about them taking ownership of that orchard as citizens that brings it more into the community than if you just had a parks department staff go out and cut down the blackberries. It embeds it in the community more" (Savina,

Personal Interview 30 Jan. 2013). The volunteer orchard stewards have a sense of ownership over their work and their public spaces that would not be possible if they did not participate in the stewardship program.

The sense of ownership over the urban orchards that volunteer stewards develop through their work maintaining fruit trees results in a different understanding of the relationship that private citizens can have with their public spaces. When asked if volunteers were best suited for the orchard stewardship program, Ms. McElroy responded: "I think it is so important for community members to be involved with what their spaces look like" (McElroy, Personal Interview 3 Jan. 2013). Apart from the fruit that the stewarded orchards produce, the physical improvements to the orchards is one of the most public and lasting contributions that the volunteer orchard stewards make to their communities. The volunteer orchard stewards are not only caring for fruit trees, they are actively shaping their public spaces and demonstrating that they are meant to be safe places to be enjoyed by all and that quality food can be grown in the unlikeliest of urban spaces. Both Mr. Maria and Mr. Elwig stressed that their respective orchards are demonstrations to the public of how to grow fruit trees in urban areas. According to Mr. Elwig, "But it's kind of the idea like, someone who comes across a tree that has maybe been allowed to grow a little oddly, how to get it back into a shape where it can produce food that people can actually use" (Elwig, Personal Interview 3 Feb. 2013). While Mr. Thompson seemed very proud of the work the volunteer stewards have done to restore the orchard at Dr. Jose Rizal Park, he made it clear that removing the non-native invasive plants and once again making the park a safe place for the community was an equal if not more important result of their work (Thompson, Personal Interview 25 Feb. 2013).

Urban orchard stewards are motivated by a desire to learn more about fruit tree maintenance, a love of gardening and caring for fruit trees, the opportunity to interact with their community, and a need to improve public safety. The program managers all spoke the funding difficulties facing the City of Seattle and City Fruit as well as the important role that the orchard stewardship program plays in the community. One of the lasting findings of this study is that the orchard stewardship program is made up of a collection of individuals. One stewards' motivations are not the same as another, and differ even more from a program manager or employee of the City of Seattle. The motivations of all of the participants are as varied as the parks and orchards themselves. The diversity of motivations increases the difficulty of volunteer management and the task of ensuring volunteer retention. Conversely, the many motivations of the orchard stewards can also be seen as a means of ensuring continued interest and participation in the program. The diversity of motivations helps bring in more participants. If increased fruit tree maintenance was the only result of the program, all of the participants motivated by social considerations and concerns over public safety would not participate. When seen in this light, the diversity of motivations is not a liability but an asset.

Chapter 5: Conclusion

This study examined why environmental volunteers choose to participate and continue participating in an urban orchard stewardship program in Seattle. There are many self-interested and altruistic motivations that drive environmental volunteers to participate in stewardship activities. It is important to recognize that not all volunteers are alike, and volunteer efforts should accordingly be structured towards meeting a variety of motivational demands.

Eight in-depth interviews were conducted in order to better understand the motivations and experiences of volunteers and paid staff working for and in support of an urban orchard stewardship program run by City Fruit. Four urban orchard stewards as well as four paid respondents working for the City of Seattle's Department of Parks and Recreation, City Fruit, and the Washington State Department of Natural Resources were interviewed. The results of the interviews allowed for a number of conclusions to be made about volunteer motivations and management and the important contributions that environmental stewardship groups can make to environmentally conscious, yet cash-strapped municipalities.

The results of this study demonstrate that volunteer orchard stewards are motivated by a variety of concerns including: a desire to learn about fruit tree maintenance and fruit production, the social opportunities that orchard stewardship provides, and public safety. From these findings alone it is apparent that environmental volunteers are not solely motivated by environmental concerns. Heartfelt social and political concerns also motivate City Fruit's urban orchard stewards.

Because of the financial limitations currently facing the City of Seattle, volunteers will continue to be relied upon to help maintain the city's urban orchards, parks, and green spaces open to the public. In order for the City of Seattle to be able to rely upon a constant source of volunteer labor, the question of why volunteers decide to join and continue to participate in an environmental stewardship effort is very important. This study has identified some of the motivations of volunteer orchard stewards in Seattle and can be used by City Fruit to more accurately target potential volunteers and maintain the current volunteer pool. Every volunteer program and stewardship effort is unique and the motivations of one volunteer are not the same as another. While this study can be useful for volunteer managers working under different circumstances, greater attempts at communication should be made by all volunteer managers to keep their volunteers satisfied and willing to continue participating.

The program manager interview respondents were all very aware of the financial limitations of the City of Seattle and stressed the important role that volunteer organizations such as City Fruit play in maintaining public goods and building community relationships. The City of Seattle would not be able to maintain the urban orchards, much less give them the care that is required for healthy and productive trees, without the help of City Fruit's urban orchard stewards. Not only are the urban orchard stewards caring for the fruit trees, they are also building valuable connections within the community that can only serve to ensure the future stewardship of the orchards and the potential expansion of urban orchard stewardship.

It is worth noting once more that City Fruit's volunteer orchard stewards are performing a valuable service that the City of Seattle would not be able to do otherwise.

Urban orchard stewardship is a unique case of volunteerism, yet it is emblematic of the role that volunteers play in maintaining urban green spaces. Most urban green spaces that have maintenance needs beyond lawn mowing rely upon volunteers. This study has shown that volunteers decide to join and continue participating in stewardship efforts for very particular reasons. More work should be done to identify volunteer motivations so that future stewardship projects can be better catered to meet the needs and expectations of a volunteer force that the larger public is dependent upon.

Seattle's urban orchards are a public good that provide many benefits to the community. Through a co-productive relationship, the City of Seattle achieves an otherwise impossible level of fruit tree care and maintenance and the volunteer orchard stewards enjoy a number of valuable experiences. Urban orchards present a unique opportunity to study environmental volunteerism, volunteer management, and the role of orchards in the urban environment. This study has shown that volunteers choose to become orchard stewards for a number of reasons and it is important to recognize that the orchards are places where volunteer orchard stewards can come to meet with one another, learn about fruit production, and produce a large amount of healthy and local food. The orchards are also available for the public to enjoy as they see fit and add to the character and beauty of many of Seattle's public spaces. Given the critical role that the volunteers play in maintaining the public good, it is vital to continue to engage and ascertain the motivations of the volunteer orchard stewards.

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