Community-Based Restoration: Preserving ecosystem services & building social capital in Seattle, WA

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This project is dedicated to all of the restoration leaders in Seattle who pour their heart and souls into making wonderful greenspaces for us all to enjoy.

Thank you to the following individuals, without whom this project would not have been possible.

John Barber | Frink Park
Wallis Bolz | Alder Creek
Mary DeJong | Cheasty Greenspace
Peggy Gaynor| Madrona Creek
David Hutchinson | Discovery Park
Liz Kearns | Licton Springs
Tom Kelly | Magnuson Park
Jason Mirro | Longfellow Creek
Thomas Palm | Discovery Park
David Perasso | Martha Washington Park

Oliver Bazinet | Seattle Parks & Recreation
Joanna Nelson de Flores | Forterra

Christopher Campbell, Ph.D. | Mentor
Ken Yocom, Ph.D. | Mentor

Abstract

In urban areas, greenspaces[i] with thriving natural ecosystems are essential to the health of humans and other living organisms. These systems provide ecosystem services, such as stormwater mitigation, carbon sequestration, and wildlife habitat, as well as space for recreation and community gatherings. Community-based ecological restoration is a strategy to preserve these essential ecosystem services while giving community volunteers an opportunity to improve their neighborhood greenspace and build social capital.

This project studies the motivations and ideologies that drive community-based restoration in the Seattle area. I conducted a comprehensive literature review of community-based restoration benefits and motivations and interviewed ten restoration leaders in Seattle. The interviews explore the diversity of approaches and outcomes of community-based restoration, drawing connections between different restoration projects.

Four themes emerged from the interviews in addition to key motivations: competing uses of the restored space, ideal trail design, the role of community in restoration and ongoing maintenance, and relationships with Seattle Parks and Recreation and other collaborators. Understanding these differences is essential to informing long term management plans for urban greenspaces, a limited resource in the face of a growing population.

[i] "Land that is partly or completely covered with grass, trees, shrubs, or other vegetation. Greenspace includes parks, community gardens, and cemeteries" (Environmental Protection Agency, 2014 http://www.epa.gov/region1/eco/uep/openspace.html)

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Context

Ecological Restoration in the Pacific Northwest

According to the Society for Ecological Restoration (SER), "Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed." In the Pacific Northwest, many forests have been logged for uses such as timber and development. When this happens, space is cleared for invasive species such as Himalayan blackberry and English ivy to take over. The presence of these species degrades important ecosystem function and habitat. Historically, the mindset for our relationship to our greenspaces has been to protect it and leave it alone. Howard Zahnsier, father of the Wilderness Act passed by Congress in 1964 states, "We should be guardians, not gardeners" (Barcott, 2015). Until 1993, no funds were budgeted for forest maintenance because there was a "forests will take care of themselves" mentality (Green Seattle Partnership, 2006). However, native conifer forests cannot be successful without seedlings and a healthy understory, which prevalence of invasive species prevents. Thus, removal of these species and maintenance of the parks is essential for their success. So, the hands-off philosophy has been abandoned. Christopher Solomon, a journalist, states,

> We need to toss out the 'hands-off' philosophy that has guided our stewardship for 50 years. We must replace it with a more nuanced, flexible approach—including a willingness to put our hands on America's wildest places more, not less, if we're going to help them adapt and thrive in the diminished future we've thrust upon them (Barcott, 2015).

Community volunteers have been restoring neighborhood greenspaces in Seattle since at least the 1990's, but in 2004, the Green Seattle Partnership formalized restoration efforts in the city. Joanna Nelson De Flores, Executive Director of the Green Cities Program at Forterra, says there had not really been a coordinated effort prior to the Green Seattle Partnership. In 2004, Seattle Parks and Recreation recognized the need for coordination and teamed up with Forterra to create the Green Seattle Partnership, a unique public-private partnership. It is nationally the first of its kind and there are currently 125 forest stewards in Seattle, and Green Cities Programs are in 6 other cities in the region. The participating cities send representatives to the annual Green Cities Network where they talk about what they've done and what their plans are for the future (Nelson). Cities that have Green Partnership Programs train volunteer forest stewards and provide them with tools, plants, and publicity for their work parties all over the city.

The Green Seattle Partnership is guided by the goal to restore 2,500 acres of forested parklands in Seattle by the year 2020. This goal is the nation's largest urban forest restoration effort (Green Seattle Partnership, 2006). Forested parks are defined as those with at least 25% tree canopy coverage. Healthy park lands, engaged citizens, and beautiful neighborhoods are really the aim of the Green Seattle Partnership in the broadest sense. As Seattle's population continues to grow, we must maintain a strong economy and livable communities.

Peggy Gaynor, a landscape architect I interviewed, speaks to how Seattle's historical development techniques and patterns affect what restoration looks like in the city today:

> Seattle Parks sites were dumping grounds for brick, asphalt, concrete, road debris…we're standing on fill here. Then we got down to the lake bed and found cool old cedar pilings so we left them [at Madrona Creek]…we uncovered this stuff humans have done. Peeling back all these layers of fill and finding these old piles. SDOT [Seattle Department of Transportation] dropped an entire roadway into the creek ravine. Huge slabs of concrete. We were pulling out enormous chunks of these. Still some concrete remains. Madrona Creek—the debris we found here is not toxic. It's amazing to me how much of our parks were used as construction debris then we cover it up with a park.

Ecological restoration is a way to uncover Seattle history, and this can be incorporated creatively into restoration projects. Large cedar pilings that were unearthed at Madrona Creek Park were left intact in to connect Seattle's history to the present. In addition to the important ecological benefits and opportunities for creativity, community-based restoration also builds social capital as neighbors get to know one another through participation. According to the Harvard Kennedy School, "The central premise of social capital is that social networks have value. Social capital refers to the collective value of all 'social networks' [who people know] and the inclinations that arise from these networks to do things for each other ['norms of reciprocity'] (2015). Engaging in a project to clean up a neglected or overgrown area in your neighborhood is a great way to build community, trust, and a sense of ownership over local public spaces. Healthy, restored greenspaces in a neighborhood are arguably just as important as strong social cohesion and trust between neighbors.

The Importance of Volunteers

Ecosystem services are not highly valued by our society, so ecological restoration is often low-paying work. Additionally, successful restoration requires on-going maintenance, so contracting the work to be done professionally doesn't always make sense because the site needs maintenance year after year. This is why the persistent efforts of committed volunteer groups are so important for our natural areas, particularly those who organize the efforts: the restoration leaders.

Personal

My passions are two-fold: enhancing green infrastructure and greenspace in cities, and building community through those efforts. An imperative link in the environmental movement is for people to recognize the societal benefits that come with a healthier environment, such as cleaner air, water, and beautiful spaces in which to recreate.

I am currently involved with a local restoration project at the Yesler Swamp, part of the Union Bay Natural Area on the University of Washington (U.W.) campus. I co-lead restoration work parties every other week for students and community members. I am a board member with the Friends of Yesler Swamp non-profit, a group that oversees all of the restoration activities in the area. The Friends of Yesler Swamp was formed when a group of Laurelhurst residents, the neighborhood bordering the swamp, decided to band together and take action regarding a neglected space in their neighborhood. They realized that this space had the potential to be beautiful, interactive, and ecologically functional. Their sole mission is to restore the Yesler Swamp and engage the local community around this effort. Plans ensued to work with U.W.

students who are passionate about restoration, then plans were made to construct a boardwalk through the swamp to make the trail more accessible. Today, two of three phases of the cedar boardwalk have been completed, and U.W. student groups have been working in the swamp as part of a restoration capstone program for a number of years.

Myself and a classmate, Tyler Licata, first visited the Yesler Swamp on September 15, 2013. We were struck by the intimacy of the narrow trail, enclosed by the tree canopy. It felt like we had stepped into an area far removed from the hustle and bustle of Seattle, but in all actuality, it was not far from urban activity at all. This place is truly an urban oasis, providing visitors a break from the sounds, smells, and chaos of the city. As we were exploring the swamp, we decided to stop and take a look at Lake Washington from what was labeled "the West Lagoon." I looked up into the trees and saw a barred owl watching us. As an avid outdoorswomen who had never seen an owl in person, this was a magical experience.

Autumn quarter, I enrolled in a class titled "Introduction to Restoration Ecology" through the Environmental Science and Resource Management (ESRM) department, and the Yesler Swamp was our first field trip destination. Through the class, I learned about the Friends of Yesler Swamp non-profit, the ESRM capstone opportunity to restore the swamp, and the history of the greater Union Bay Natural Area. I recognized my passion for urban greenspaces and connecting people to them, and decided that I wanted to become involved with the restoration efforts. I contacted the Friends of Yesler Swamp and Tyler and I met with a member from their team, Jerry Gettel. We learned more about their organization and about how we could contribute to their mission and plans. I chose not to pursue the ESRM capstone because it required that I wait until my senior year. I instead chose to volunteer my time without school ties.

Tyler and I have hosted work parties every other week, recruiting our friends, the community, and a variety of organizations to join us all year long in all kinds of weather. Normally, students would learn how to restore a site through classes in the ESRM department, instead, we consult with the mitigation head of the swamp, Fred Hoffer, to discuss where to work, what to remove, what to plant, etc. We have a large degree of freedom regarding what we can do at our mitigation site. As part of the restoration scene in Seattle, I learned that there are a lot of restoration groups, events, and sites in this area, which is a large contributor to why Seattle is such a green, healthy, and attractive place to live. People care about their local environment, enjoy spending time outside, and enjoy contributing to a greater good beyond themselves.

It takes a lot of time and energy to manage our website (yeslerswamp.weebly.com), volunteer database, outreach efforts, and the grant we received to construct a bird blind in the swamp. Therefore, I have never explored how other groups lead and manage their restoration work at different sites. Through this project, I learned about the differing motivations and ideologies that drive leaders at different restoration sites.

Literature Review

Introduction

It is unquestionable that humans have been impacting nature's ecosystems for centuries. It is also unquestionable that humans have been benefitting from ecosystem services since the beginning of time—freshwater, clean air, food, etc. However it was not until recently, within the past 50 years, that humans began to understand the capacity of the Earth, and the limits of its services to society.

Despite the beginning of environmental legislation in the 1970's with the Clean Water Act, Clean Air Act, and the National Environmental Policy Act, among others, there is still an incredible amount of polluted and degraded ecosystems today. What can contribute to mitigation of this pollution is the practice of community-based ecological restoration. Community-based ecological restoration is a way for people to contribute to improving their local environments, often at a grassroots level, that is a necessary component of successfully rehabilitating our natural areas. The benefits of community-based restoration are not exclusively environmental—research has shown that there are many psychological benefits for those involved including connection with nature and building social capital.

This literature review seeks to identify what constitutes community-based restoration, its merits for both the environment and for humans, and previous research conducted on environmental volunteering motivations. This is part of a broader project that seeks to tell a story about the motivations that drive community-based restoration in the Seattle area.

Perspectives on community-based ecological restoration come from a variety of professionals including scientists, psychologists, academics, and government officials. Some highlight the society and community values, while others harp primarily on the ecological benefits.

Ecological Restoration

According to the Society for Ecological Restoration (SER):

> Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. An ecosystem is considered officially restored when it no longer requires human influence to sustain itself structurally and functionally, and is resilient in the face of normal ranges of disturbances and stress (2015).

Given this official definition, it is important to note that it is often argued that an ecosystem is never "officially restored," rather, human intervention through maintenance and monitoring is necessary in at least some capacity, indefinitely. Thus, ecological restoration is a continuous process that is never quite finished, especially if the restored space is used for recreation. One Green Seattle Partnership Forest Steward interviewed in a study stated, "Even when restoration is done, there will always be a need for some maintenance to occur…completed ecological restoration, I don't know if that really exists…it just turns into a maintenance phase" (Hellier, 2012). There is a myriad of differing opinions regarding the ecological restoration process, goals, and outcomes. Due to this, conducting qualitative interviews with committed

restoration volunteers is an important methodology to most holistically understand the process, which this project seeks to do.

Goals of ecological restoration may be species specific (i.e. stream restoration to provide habitat for salmon), to maximize an ecosystem service such as mitigating stormwater runoff, to provide recreational space, to create a romantic and idealized version of what the land once was, or to engage the community in a local project. Restoration is a science and a practice that has changed over time as "evolving societal values and judgments of people regarding nature" have changed (Yocom, 2007). A common tenant of restoration is the importance of understanding the history of a project site. Controversy occurs around the issue of historical condition of a site and whether it should be used as a reference or target ecosystem when being restored. According to the California Coastal Commission, historical conditions may no longer be feasible in a selected project area due to climate change or extreme soil degradation (2008). When this happens, more feasible goals must be considered such as focusing on enhancing existing ecosystem benefits.

Restoration sites should be chosen to strengthen the link between already existing and well-functioning habitats. This contributes to habitat corridors that wildlife can use to navigate urban areas. A site should also be chosen based on feasibility of access by volunteers—can volunteers with limited training work here, or are power tools necessary to get the job done? Do toxic or hazardous chemicals need to be cleaned up, or just invasive plants that are harmless to humans (Finstad et al, 2008)? Some restoration sites require professional crews to get the job done and are not good candidates for community-based restoration projects. These include sites with contaminated soil or steep slopes. Even if the community cannot participate in the physical work involved with a restoration project, every effort should still be made to involve them in the planning process.

Community-Based Ecological Restoration

Community involvement allows for projects to be widely accepted by the public when completed because it requires people to take part in the restoration and feel connected to the space. It is important to note that community involvement can and should occur at any stage of a restoration project, not just the physical restoration work. In the case of brownfield sites, community volunteers will often not be doing the actual restoration, but may be very involved in the planning and design process that precedes the clean-up and restoration. Brownfield sites contain contamination, generally in the soil, due to previous industrial or commercial usage, i.e. an oil refinery or chemical factory. Thus, these sites are not suitable for volunteer labor.

Through involving the community, differing opinions can be addressed at the outset, rather than when the project is further along. According to SER, federal money to restore and revitalize brownfield sites are only administered to projects that have clear documentation of community involvement. Community members can also offer valuable insight regarding what has been tried in the past, which could impact the trajectory of proposed projects. Friends of Gas Works Park, in Seattle, WA is an example of a community organization that is recognized by the City of Seattle as a steward of the iconic park (Friends of Gas Works Park). They focus on disseminating historical and other educational information to the public about the park. All clean-up and restoration efforts that have taken place at the park are done by professional work crews due to the toxicity of the soil. Nevertheless, the Friends of Gas Works Park plays an integral role in advocating for the clean-up and ensuring it addresses the surrounding community's needs.

SER goes on to identify potential community involvement challenges including educating volunteers about the goals of the project/process, and building trust among various stakeholders. At the Yesler Swamp, a site where community volunteers are strongly encouraged to participate in the physical restoration, all volunteers are educated about the history of the site before they participate and why wetland restoration is important to give them context for the work they do. I co-lead restoration work parties at the Yesler Swamp with another student at the U.W. In addition to being students, we are also board members with the Friends of Yesler Swamp non-profit. These are two characteristics that help build trust with volunteers that might not be present with a private company that is hired to execute the restoration. I have not yet faced any challenges from the public while working to restore the Yesler Swamp. The public has been in agreement with the mission of restoring the Yesler Swamp and has been in support of the attraction of wider public attention.

Though community engagement takes time and energy, it is a crucial component of ecological restoration to accomplish the work, mitigate potential future conflict, and to most holistically understand a project site and its context.

Human Benefits of Ecological Restoration

It is undisputed in the literature that participating in ecological restoration is fulfilling for humans. Peter Leigh, an economist and member of the National Oceanic and Atmospheric Administration focuses largely on the psychological benefits to humans of ecological restoration. He introduces the idea of ecopsychology in his argument for community-based restoration as an instrument for social change. "Its central [tenant] is the recognition that human health is intrinsically connected to the health of the planet and that both are mutually inclusive of the other" (207). He mentions the merits of community-based restoration largely from an anthropogenic point of view. Restoration cultivates a sense of place and emotional commitment; meaningfully connects humanity with the environment; and shows that a small group of citizens can contribute to their obligation to future generations. Unlike passive recreation such as wildlife viewing and hiking, restoration gives volunteers a problem, a solution, and tangible results—satisfaction. "Global environmental change is often too elusive to grasp…" (8) whereas local restoration allows people to positively impact their immediate landscape.

A University of Wisconsin team that partners with schools to incorporate ecological restoration in elementary and middle school curriculum echoes Leigh's ideas. "Kids need to feel important, to feel that they make a difference in this world. This program provides ways to give kids a sense of purpose and build competency" (Bauer-Armstrong, 2010). Purpose, competency, satisfaction, tangible results; all authors who discuss the psychological importance of restoration emphasize this. People generally seek more than just being happy—they also want to contribute to something greater that they can look back on and say "I was a part of making that happen." During one four hour work party at the Yesler Swamp with about ten volunteers, an entire hillside of Himalayan blackberry was cleared, native plants were installed, and about 90 pieces of litter were picked up. The restoration site is now visible from the street, free of garbage, and tells passerby that people are actively cleaning up this space. Each of those volunteers can come back to Yesler Swamp and say, "I made a positive impact here. I contributed to that."

Richard Louv, author of "The Nature Principle," is one of many researchers around the world who advocate for the health benefits of spending time outside in nature. Or, as Louv puts it, "human restoration and the end of nature-deficit disorder." His argument is that when people

spend more time in nature and less time indoors with technology, their lives and communities are bettered in many different ways. One example of these community benefits is increased safety because there are more eyes on the street and neighbors know one another when people are outside more often. "But, unless we act quickly to conserve and restore…then nearby nature will become a quaint artifact of another time" (199). Both Yocom and Louv reinforce the importance of community-based restoration and activism in preserving urban greenspaces—just regulations from top down officials is not enough. "Natural capacity isn't only defined by the strengths that a culture brings to the creation of nearby nature. It's also about a people's capacity to marshal community organizing tools" (219). Implementation of green infrastructure and spaces will be the most valuable and successful when people are involved in the process and feel ownership of the nature that is in their community—to the point of being moved to fight for it. Restoration is an important way to accomplish this as it requires the maintenance of the community.

Any community-based restoration project, regardless of the primary goals, people involved, ecosystem, or location, will, if done successfully, improve environmental quality and leave volunteers feeling satisfied and connected to the site.

Ecological Restoration Motivations

The literature shows that participating in community-based ecological restoration has clear benefits for the environment and humans alike. So what motivates people to actually go outside and participate, if not these benefits? It is important to note that forest stewardship, urban conservation stewardship, and community-based restoration are used synonymously in this literature review. In one study conducted by faculty at the University of Washington School of Environment and Forest Sciences and the U.S. Forest Service, researchers wanted to understand what motivates volunteer commitment. They noted that this knowledge might help coordinators plan conservation activities to be consistent with volunteers' motivations to commit to specific projects. It was found that forest stewardship volunteers tended to be "motivated by personal, social, and community functions more than environmental motivations" (Asah and Blahna, 2013). The environment was a significant factor in volunteer commitment only when personal, social, and community-building goals were met. This is not surprising, as the work that is often associated with ecological restoration and forest stewardship in general (picking up litter, removing invasive species) is not necessarily appealing in and of itself to most people.

Through key informant interviews, Asah and Blahna asked committed urban conservation volunteers what it means to them to be committed and motivated (869). Using findings from these interviews, a questionnaire was developed to measure what motivates a wider range of urban conservation volunteers. It was found that in an age of declining community vitality and growing guilt over environmental issues, people seek out opportunities to "protect the ego against feelings of guilt and to rebuild community and social relationships lost as a result of urbanization" (873). This suggests that volunteer coordinators should promote and facilitate people-centered activities that cultivate social interactions, instead of just focusing on the environmental benefits of volunteering with their organization. This might result in increased volunteer retention.

At Yesler Swamp, there is a core group of about five volunteers who are present at almost every work party. The other ten volunteers who come to each work party varies every time. While it is exciting to show new people the swamp, we do wonder why more people don't return. One community building activity we do is write a "swamp journal" entry after every work

party that calls out people who were in attendance, includes pictures, and documents highlights of the work party. This is a fun way to document each work party and remember everyone that has attended.

Another study conducted by Justin Hellier, a Master of Science Student at the University of Washington School of Environment and Forest Sciences involved Conceptual Content Cognitive Mapping (3CM). The 3CM methodology seeks to have participants construct mental representations of the systems with which they interact, from which both qualitative and quantitative data can be drawn to describe patterns and other key information (25). Hellier's specific 3CM procedure included prompting questions to understand how each Steward understood ecological restoration at their specific site. Questions included: "what did your site look like before you began any work? What will it look like completely restored? What will be happening at the site? What is your process of ecological restoration at your site?"

Hellier found that their sites were "degraded in terms of their ecological and social value" (39) which includes invasive species, declining tree canopy, litter, and illicit use of the space. When asked about what the completely restored site might look like, answers included dominate presence of native species and stronger community engagement with the site (44). It was summarized by Hellier that "no two [Green Seattle Partnership Forest] Stewards understand the process of ecological restoration in exactly the same way" (46). He classified the participants into "The Ecologists (60%), The Community Organizers (20%)," or the "Community-Based Restorationists (20%) depending on their mental models (54). It was found that the concepts with the least-shared understanding among Stewards were the role of an engaged community in the long-term sustainability of the site, and the role of intensive, long term maintenance versus a restoration intervention that eventually results in a "hands-off" ecosystem" (71).

These differences in understanding could be due to the type of site being restored. For example, a forest with a rugged and lightly used trail system may not require long term restoration maintenance. This is because once the restoration volunteers eradicate the invasive species and help the native species establish, the lack of human activity through recreation allows native ecosystem processes to flourish, relatively undisturbed. On the other hand, a site that has a heavily used hiking and biking trail system would require continual maintenance. This is because the natural ecosystem processes occurring in the space as a result of restoration may be continually disrupted by human activity, and maintenance must happen on a consistent basis. If a restoration leader envisions their site as an active recreational space, they will probably envision maintenance as a never ending job. If a restoration leader envisions restoring a pristine forest that will be fenced off to the public, then they may envision a future time when the forest will be self-sufficient and their work is done.

Given that the stewards are working towards a similar goal of enhancing urban forestry, this ambiguity surrounding community engagement and the role of long-term maintenance is compelling. Hellier calls for refinement of the Green Seattle Partnership's goal to integrate clearer goals related to these in their mission, through collaboration with the stewards.

A Restoration Narrative

These recommendations for the Green Seattle Partnership, specifically the Forest Steward program, are useful as the author plans to interview some of these stewards, perhaps some of the same individuals as Hellier. In contrast to Hellier's study, however, the author seeks to fully

understand roughly ten restoration leaders and their specific site in an attempt to explore a diversity of approaches to community-based restoration.

Some of the leaders interviewed will be Green Seattle Partnership Forest Stewards, others will not. This consistency is not terribly important for this study, as it was for that of Hellier. Interview questions will inquire about what context volunteers are given about the site (i.e. history, relevant ecosystem services, etc.), why the steward chose the specific site where they work, how community members are recruited and if the same volunteers come multiple times, and what social or people-oriented benefits do they see their work providing.

In Yocom's dissertation regarding urban stream restoration, he states, "[my research] examines how these competing actions reflect the cultures of the people who are engaged and involved in attempts to restore urban streams" (24). These competing actions referenced by Yocom could refer to, in the case of Hellier's study, the ambiguity of the role of community engagement and intensive, indefinite site maintenance. This research aims not to reconcile these differences, per se, as Hellier suggests in the refinement of the Green Seattle Partnership mission statement, but rather to understand why these differences exist and come to be within the context of each specific site and restoration leader.

This research seeks to utilize Donna Harraway's concept of "situated knowledge," which argues that what each person has to offer is dependent on their own personal experiences and cultural structures (Yocom, 2006). This provides a framework for understanding each restoration project in this study within both its unique localized context and how the individual restoration leader shapes the process and ideas of what restoration ecology means at each site. Hellier's study brought to light differences that exist between mental models of stewards regarding what ecological restoration means at each site. However, the lack of tying these findings to each steward's specific site is where a clear gap exists. The author argues that each idea brought forth in the mental models in Hellier's research were intrinsically linked to the specific site, and the life experiences of the steward. This project seeks to link these differences that exist among restoration leaders to their specific site and personal experiences. This link is important to most holistically understand the best practices for different types of restoration sites. Since Seattle has an innovative partnership, the Green Seattle Partnership, to help accomplish the city's urban greenspace targets, this research can provide a model for other cities interested in ecological restoration. This research will culminate in a thoughtful narrative of community-based restoration in Seattle; a story of the stewards who commit themselves to creating thriving social-ecological landscapes in the city.

Methodology

I first interviewed someone at Seattle Parks and Recreation and Forterra to inform the context of restoration in Seattle. I then developed an interview protocol to use with restoration leaders in Seattle. The questions were developed to understand the story of each leader and their site, their ideal view of their site, how they engage community, and what motivates them to return to the site time after time. The interviews explore the diversity of approaches and outcomes of community-based restoration, drawing connections between different restoration projects and experiences.

I chose individuals to interview based on suggestions from my mentor, Ken Yocom, and my own personal connections. I also emailed as many groups as I could find on the Green Seattle Partnership website, and asked Oliver Bazinet (whom I interviewed at Seattle Parks and Recreation) to forward my request for interviewees via email to the Green Seattle Partnership Forest Steward listserv. I did not set out to interview exclusively Green Seattle Partnership Forest Stewards, but many of the restoration leaders I was able to connect with were.

I tried to interview people at their restoration sites and attend a work party they were leading so I could get a better understanding of their work. It is important to conduct the interview at a time other than the work party though because the leader will be distracted by leading the work party. The below interview protocol was used as a guide rather than a strict protocol, as the interviews were semi-structured.

1. Are you a Green Seattle Partnership Forest Steward? How long have you been involved with the Green Seattle Partnership? Were you involved with any forest stewardship projects prior to this?
   ➔ *To understand their background and how they got involved with restoration*

2. Why did you choose this particular restoration site?
   ➔ *To understand their motivation for getting involved at their site*

3. What did this site look like before any restoration began?
   ➔ *To understand the history of their site*

4. Imagine your site when you are done restoring it. What do you see? What is the ideal use?
   ➔ *To understand their motivation for continuing to be involved and their ideologies regarding use of open space*

5. Please describe your process of ecological restoration.
   ➔ *To understand how they think about ecological restoration and if there is a guiding plan for their site*

6. What sort of context do you give volunteers before they start work? i.e. history of the site, ecosystem services, how to use tools, etc. Is this formal or informal?
   ➔ *To understand how they interact with volunteers and how they structure and lead their work parties*

7. How do you decide what to do here each work party?
   ➔ *To understand how they structure and lead their work parties*

8. What value do you see in improving public property?
   ➔ *To understand why they spend time at their site rather than, for example, their own private yard or garden*

9. Do you collaborate with other organizations/funding organizations to achieve your mission?
   ➔ *To understand the stakeholders involved in the project*

10. How do you recruit community members to come to your work parties? Where do they come from? i.e. the community where your site is?
    ➔ *To understand how they interact with volunteers and engage people in their work*

11. Do you have returning volunteers?
    ➔ *To understand who attends work parties*

12. What motivates the restoration work you do? Why is this work important to you? What brings you back each time?
    ➔ *To understand why they continue to be involved in the project*

Results

This section will introduce the interviewees and restoration sites individually, then discuss key motivations and ideologies that emerged. One common theme among the restoration leaders is a dual passion for gardening in addition to restoration.

Interviewees & Restoration Sites

Restoration Sites Involved in Study

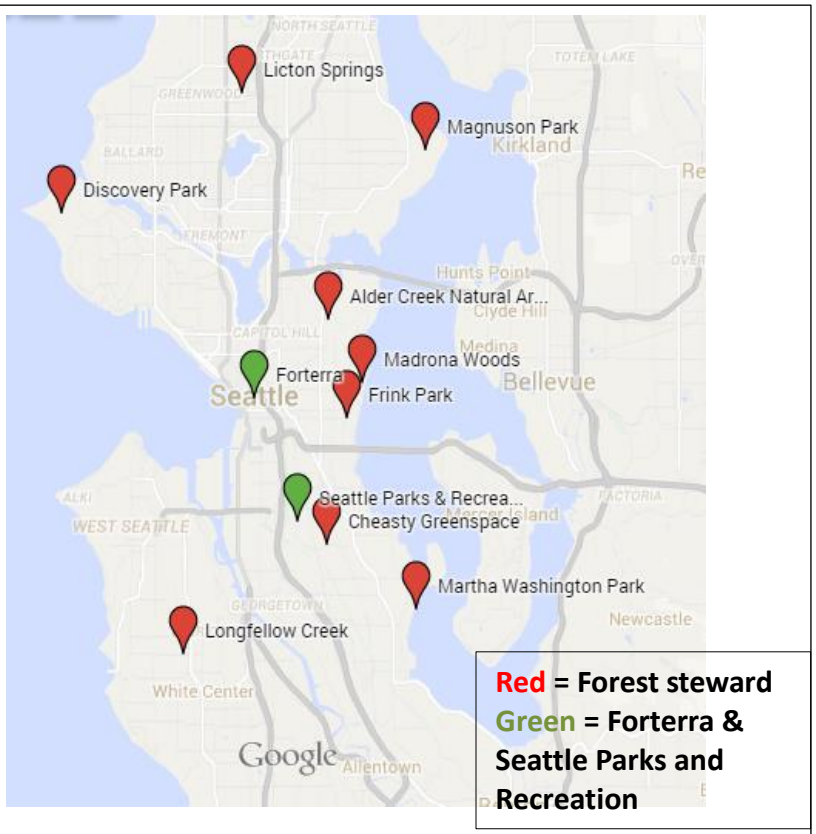

Figure 1. Restoration sites involved in this study. *Source: Google Maps 2015*

Summary of Ten Forest Stewards Interviewed

Name (Gender)	Restoration Site (# years involved)	Occupation	Average hours spent at site
John Barber (M)	Frink Park (17 years)	GSP Steward/Native Plant Steward (1998)/ retired landscape architect	3 hours per week
Wallis Bolz (F)	Alder Creek (7 years)	GSP Steward	NA
Mary DeJong (F)	Cheasty Greenspace (7 years)	GSP Steward	NA
Peggy Gaynor (F)	Madrona Creek	landscape architect	NA
David Hutchinson (M)	Discovery Park (15 years)	GSP Steward/natural history bookseller	10 hours per week
Liz Kearns (F)	Licton Springs (20 years)	GSP Steward/gardener & horticulturist	8 hours a month
Tom Kelly (M)	Magnuson Park (18 years)	GSP Steward/ retired chief operator at electric utility	20 hours per week of work + 12 hours per week of administrative tasks
Jason Mirro (M)	Longfellow Creek (14 years)	senior resource planner @ King Conservation District	6 hours per month
Thomas Palm (M)	Discovery Park (18 years)	GSP Steward/retired program and software manager	7 – 15 hours per week
David Perasso (M)	Martha Washington Park (3 years)	GSP Steward/WA Native Plant Society Steward/retired software engineer	6 hours per week

John Barber
Frink Park

John Barber has lived in the Leschi neighborhood of Seattle since 1971, and has been an active community member ever since. He attended graduate school in Chicago where he studied sociology and landscape architecture. He has been a Washington Native Plant Steward since 1998, in addition to being a Green Seattle Partnership Steward. He also enjoys gardening, bicycling, and watercolor painting.

There is a Leschi Green and Open Space group, and within that there is a "Friends of" group for each greenspace. The Leschi neighborhood created their own greenspace plan in 1988 because they wanted to do something about all of the trees that were disappearing due to development. As more volunteers became interested in helping to conserve and restore

greenspaces in Leschi, it was realized that there was a need for a plan to get everyone aligned in the same direction. "There was a lack of what we value….an abundance of woods," says John. Funds and permissions were acquired through grants and through the city, respectively, and then a landscape architect was hired to hold public meetings and gather input from the neighbors to inform a design for greenspaces in Leschi. Different ecological zones were identified throughout the greenspaces to have their own unique pallet of plants.

John and I walked through Frink Park on February 21st, 2015 (Figure 1), a 17.2 acre forested park. Originally private, Frink Park was gifted to the city of Seattle in 1906 by John and Abbie Frink to be a part of the Olmstead plan for Seattle parks and boulevards (The Friends of Frink Park). This park was important to the Olmstead plan because of the spectacular views overlooking Lake Washington.

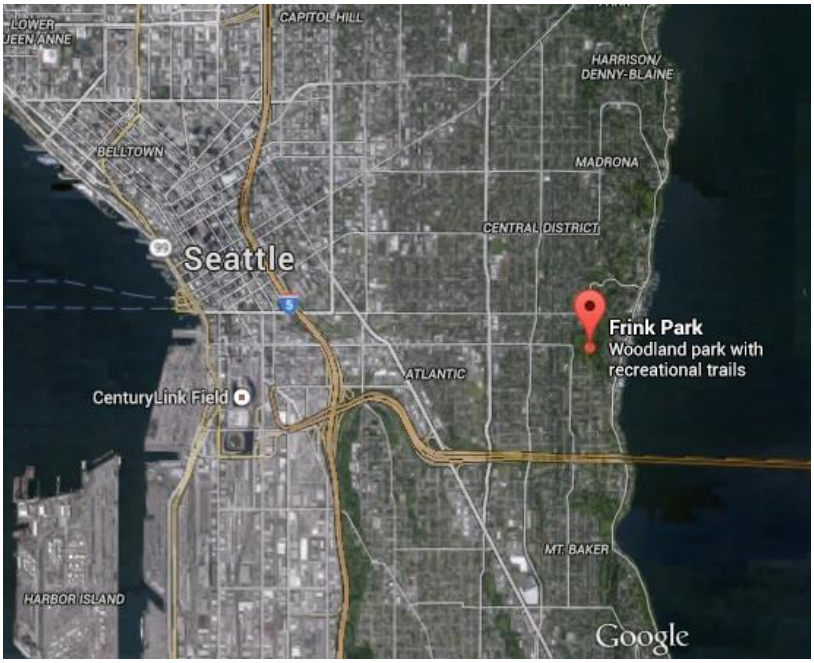

Figure 1. Frink Park. *Source: Google Maps 2015*

The atmosphere in forested Frink Park is quiet and serene. During our walk, we observed many people experiencing the park in solitude. "Many people don't realize it's here…only neighbors really use it, many people just drive by it," says John. During our walk, we ran into an avid walker who echoed that the park is a very private place that many people like to experience in solitude.

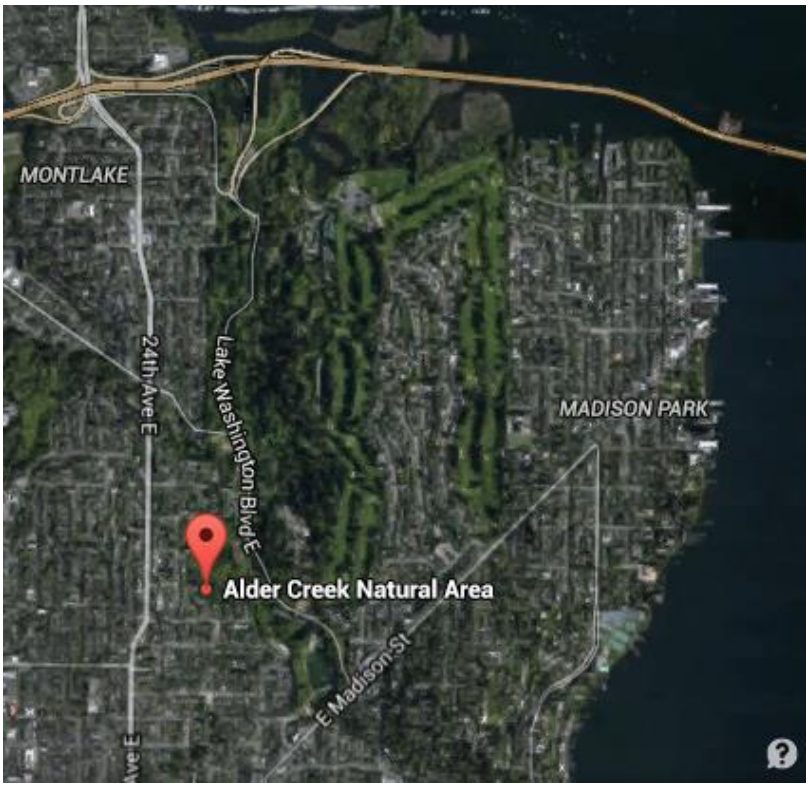

Figure 2. Alder Creek Natural Area. *Source: Google Maps 2015*

Wallis Bolz
Alder Creek

Wallis Bolz has lived in the neighborhood near Alder Creek (Figure 2) since 1995, and spearheaded restoration of the natural area in 2008. The effort started when a group of neighbors got together to map the neighborhood from an ecological perspective. They wanted to know how much of the neighborhood is pavement, lawn, or garden. "What spaces in our neighborhood are public?" They wondered. Neighbors thought the space was privately owned because it was so neglected. Wallis says that Alder Creek looked like many neglected forests in

Seattle, overgrown with Himalayan blackberry and English ivy prior to any work. People used it as a dump site. This mapping brought the neighbors together.

Wallis became a Green Seattle Partnership Forest Steward in 2006 and began to work at Alder Creek. "Neighbors don't like change. Restoration can be extremely unpopular because it brings people into an area. But they eventually come around. The start is just fraught with difficulty," says Wallis. This site is unique in this study because it is in a neighborhood and borders many homes, thus some people feel like volunteers are invading their space by working near their homes. Wallis continues to organize the effort through monthly work parties. At the beginning, she posted flyers and went door to door to build a core group of neighbors who wanted to work on the site. Additionally, the group participates in the "Day of Caring" every year with United Way, which brings new volunteers to the site each October.

I walked through the Alder Creek Natural Area with Wallis on the sunny afternoon of May 4, 2015. This whole area is considered part of the backdrop of the Japanese Gardens in the Arboretum so the City wanted Alder Creek to remain undeveloped. Wallis says:

> This is a Puget Sound Lowland Forest so the dominant species are Red Alder, which seeds in as we clear, Western Sword Fern, and Big Leaf Maple which will persist after the Alder goes away. We also plant Oso Berry, Indian Plum, Thimbleberry, Salmonberry, Douglas Fir, Western Red Cedar, Snowberry, and Hemlock. I let people put stuff in that they want and if they persist then they'll survive.

Here, Wallis alludes to the trial and error process that is common to many restoration projects. "What wants to live here will live here. Plants will just die if they don't like it here."

Mary DeJong
Cheasty Greenspace at Mt. View

Mary DeJong is the co-founder and chair of the Friends of Cheasty Greenspace at Mt. View and is also a Green Seattle Partnership Forest Steward. In addition, she is a mother of four young children and lives right below an entrance to the Cheasty Greenspace at Mt. View, a ten-acre urban forest between Beacon Hill and Columbia City. This forest is part of the larger 43 acre Cheasty Greenspace (Figure 3). Mary studied ecotheology in graduate school and strongly believes that nature connects us better to ourselves, the land, and our communities.

I participated in a work party at Cheasty Greenspace at Mt. View on March 7, 2015 and was astounded by the number of small children present. Some were eagerly helping, others were playing with one another.

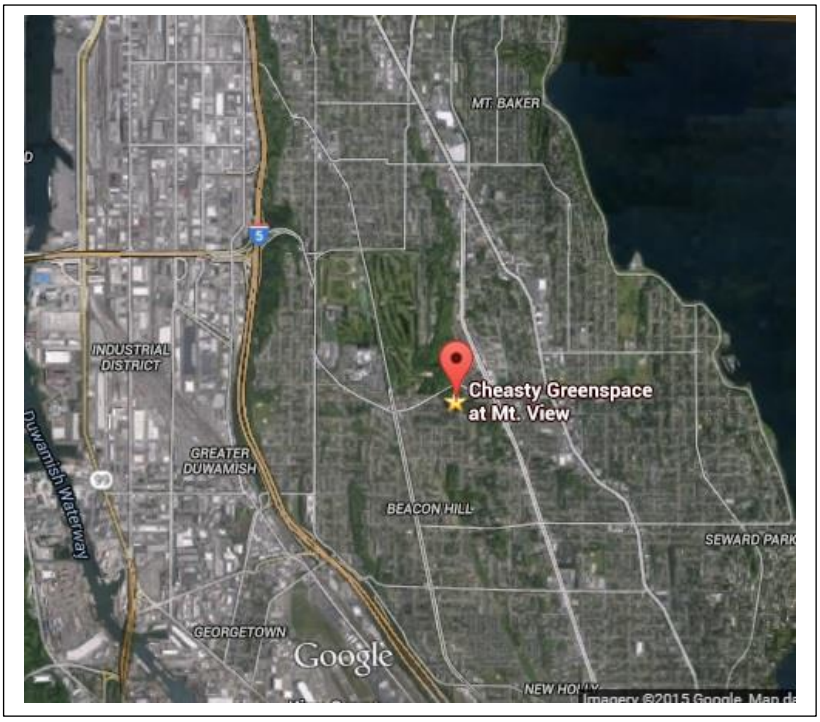

Figure 3. Cheasty Greenspace. *Source: Google Maps 2015*

The community cultivated around this area was very evident as volunteers enjoyed one another's company and refreshments after the work party. Cheasty Greenspace used to be overgrown with Himalayan Blackberry and English Ivy, casting the entire space in shadow, and making it a hotspot for homeless encampments and illicit activities such as prostitution and drug use. The neighbors saw the potential for this space to be used by the community in other ways from recreational use to a corridor connecting the North Beacon Hill neighborhood to transit on Martin Luther King Jr Way South.

"The volunteer group became more organized in 2008 and did regular restoration work parties," says Mary. The first grant acquired was used to hire a landscape architect and lead a public process to figure out the trail design. After another grant, a crew was hired to build the stair climb. Other than that, everything is done by volunteers. "This really began to attract the neighbors. We saw the land differently, no longer something to be afraid of," says Mary. More neighbors became Green Seattle Partnership Forest Stewards in 2014, and the Friends of Cheasty Greenspace at Mt. View were getting asks to do corporate volunteer events from Starbucks, Southwest Airlines, and others. In addition to hiking trails, volunteers are working on creating mountain biking trails, which is causing controversy amongst people who do not think the greenspace should be used for that activity.

Peggy Gaynor
Madrona Creek

Peggy Gaynor is a landscape architect who works with "Friends of" groups to restore and enhance greenspaces around the region. She has been working with the Friends of Madrona Creek (Figure 4) since 1998 and has a strong background in art, biology, and ecology. She began practicing landscape architecture in 1983 with an eye towards infusing design with ecological principles. I met with Peggy on a rainy afternoon on April 24, 2015. Peggy says:

> I was doing green parking lots before all the hip names. There are so many opportunities in the city it's unbelievable. I just went for the opportunities. Nobody else was doing this work. I started my alternative practice in the 80's. When I started, I got lambasted by landscape architects. They said: what are you doing? This isn't landscape architecture. I look for opportunities wherever they exist…in suburbs, all over the place. I've been daylighting creeks since the mid-80's. It's just what I do. And I don't wait for some project to be presented, I find them, I make them. I'm on a project and I propose an alternative. And it saves money. It's interesting to see all these terms catch up with what I've been doing for 30 years…green infrastructure, sustainable design, low impact development, LEED. It's vast.

This particular project at Madrona Creek started when the Friends of Madrona Woods wanted to take their park back. They knew they had a beautiful natural resource that needed help, and they continue to help, 20 years later. Peggy says, "It feels like old growth forest now, open…completely different place. Diversity, creeks, wildlife, understory, canopy. Complete transformation. And right in the middle of the city."

Peggy describes her process for doing projects like Madrona Creek:

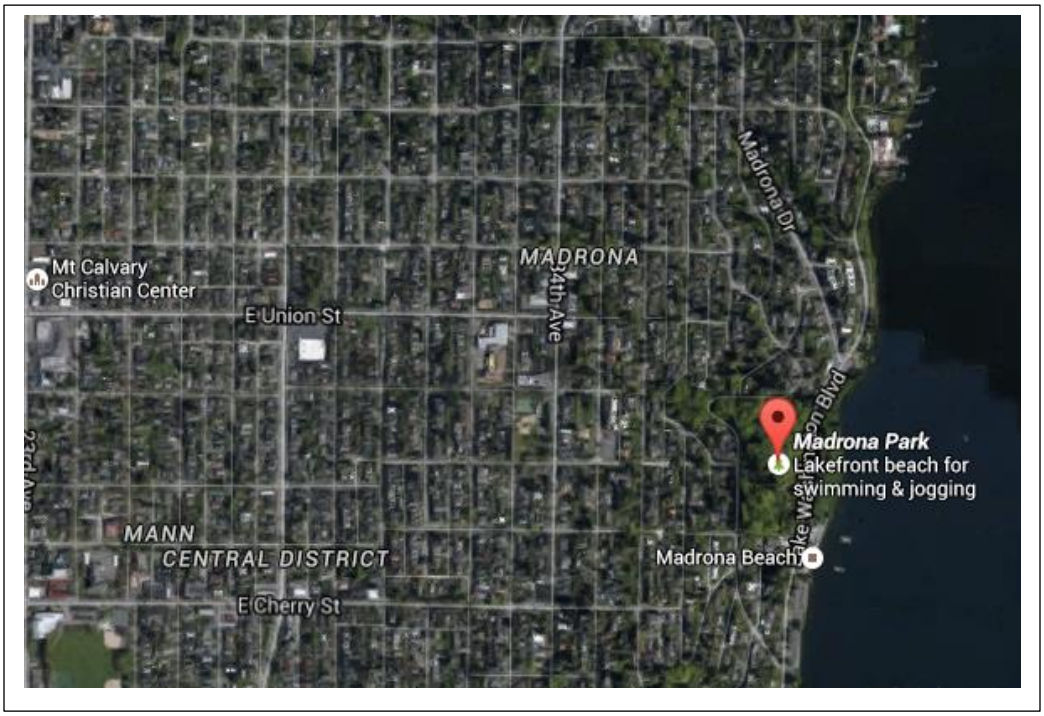

Figure 4. Madrona Creek Park. *Source: Google Maps 2015*

I have a strong ecological background. Based on soils exposure, you've got to do the site analysis. Every project I work on, I do historical research and ecological research. What's the soil type? What are the hints of existing native vegetation that may still remain that gives you clues about what the site really wants to be and what would be successful? I always do historical research on sites. Look at aerials, remnants of native plants to inform design. We'll create a planting mosaic and see what wins through experiments. You have to respond to what the site can be, wants to be, and has been, even if it's filled.

Peggy goes onto describe the various stakeholders she works with: "I work with fisheries people, wildlife, civil engineers, geotechnical engineers. We've moved so much earth in this city!" Peggy describes problems unique to Madrona Creek because it is on the shoreline of Lake Washington:

> The whole arboretum is full of Reed Canary Grass and all the seeds float down to here so we're constantly fighting that and blackberry. You set a stage, but you don't just walk away. Because it's not pristine, because of the urban context. At a certain point, the forest has grown up enough that it's shaded out a lot of the invasives and the amount of work is diminishing. However, it's still surrounded by all this urban-ness.

The Master Action Plan for Madrona Creek calls for restoration of 10+ acres of Madrona Woods; daylighting of ¼ mile of Madrona Park Creek to make it visible and audible for community awareness; increase use by wildlife and people; redesign, relocation, and rebuild of ½ to ¾ mile of trails to be sustainable, scenic, safe, inviting, and accessible; and involvement of people of all backgrounds and ages in restoration activities to promote environmental learning, awareness, and enjoyment. The Environmental Education Program the Friends of Madrona Creek did involved assigning plots to teams of kids to plan, clear, plant, and mulch. An emphasis was put on "ego-less" design which involves putting more emphasis on "fitting and revealing" the place rather than imposing a designer's style. The goal is for a casual observer to visit the place and feel like what was designed looks like it's been there forever (Madrona Woods Restoration).

David Hutchinson
Discovery Park

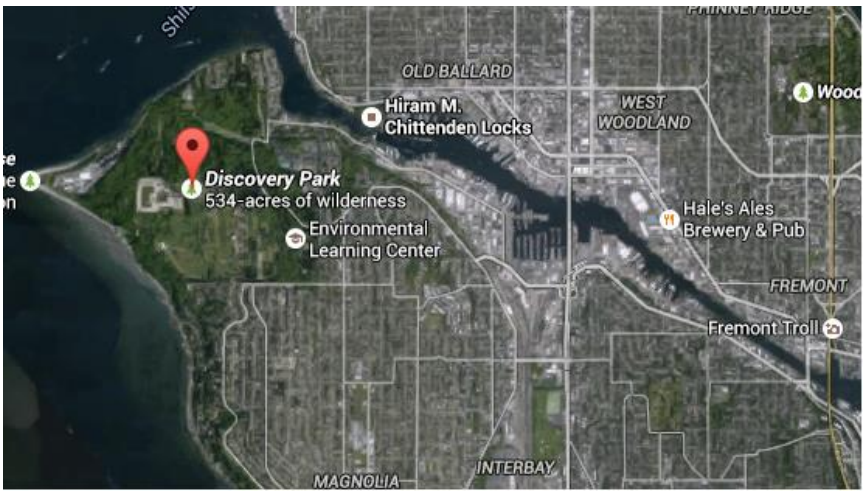

Figure 5. Discovery Park. *Source: Google Maps 2015*

David has lived in Seattle for nearly 40 years. He first became involved at Discovery Park in 1977. His first job when he immigrated to the states from England was working for the maintenance crew at Discovery Park, which he did until 1985. He took care of trails and native plants. When he left that job for another, he continued to work at Discovery Park as a volunteer. Prior to the Green Seattle Partnership, David was an Adopt-An-Area (AAA) volunteer for ten years, until he became a Green Seattle Partnership Forest Steward eight years ago. David contributes his good health to contact with nature throughout his life. He says, "I'm in pretty good shape for being a geezer… Despite 'geezerdom,' myself and other volunteers are pretty high functioning and healthy, mentally and physically. I'm happy and healthy being an outdoor restoration volunteer geezer." He spends about 20 hours per week at Discovery Park in addition to spending time emailing, planning and going to meetings. He is an ornithologist and ecologist, and has a degree in U.S. history. I met with David at the Environmental Learning Center after walking with Tom Palm through Discovery Park (Figure 5). David says:

> When I look at Discovery Park, I see a place that's been completely trashed by being an army base. And it's all second growth native trees and shrubs and invasives, and the major forest here is dying and a significant percentage of the forest here will be dead unless people do something. All of the deciduous trees (maple, alder, willow) are dying which you can tell when the woodpecker species increase. Because the ground has been disturbed and the top soil has been removed here, there's no natural succession."

Anywhere there's a slope is the best vegetation because the army couldn't build there. There are some parks in the area where people pull out weeds, and trilliums will start popping up. David says that Discovery Park is at least 30 years away from having wildflowers like trillium bounce back so quickly due to the disturbed nature of the site. When asked what Discovery Park would look like in an ideal world, David says:

> A third of the park would be historical artifacts representing the whole history of the base. Another third would be open space where one could just walk openly with one's dog on the leash and push kids in the stroller. The last third would be complex spaces of various native vegetation. A complex understory, complex canopy, a variety of mature forests. More coniferous. People could contact the native flora and fauna of the northwest but within the city where it can be interpreted.

David explains that Discovery Park is the biggest in the system, but it receives the least amount of money. "People think this is a wealthy entitled park, but it's not. We don't even have a manager. Magnuson Park gets a lot more money relative to Discovery Park. It's hard to even know how the funding gets distributed." He says that he would prefer that money go to parks based on acreage, and that as much money should be given to parks as is invested in recreation. "There's a lot of greenbelts in Seattle that get decimated. There's all kinds of slopes throughout Seattle that has all the Maples on them and they could be planted with conifers. No more destruction of greenbelts. Those are our last refuge." David says that his favorite thing to do here is to monitor bird populations and see the changes because population changes indicate changes in habitat. He says that there are maybe 260 native and migratory birds total on the Discovery Park bird list. He says:

> I'm doing a study right now...my site's about 30 acres and it's got 60 thousand plants on it. Once the property became Parks Department owned, I started a bird census which I do once a month. And it's tied to changes in vegetation. I like doing the bird census to see if there's any changes or relationship to the planting. After three years, there's no relationship. All the birds that we have are birds that have come to the site as it originally was.

David participates in work parties every Friday morning with a core group of dedicated forest stewards at Discovery Park. A fellow forest steward, Tom Palm, whom I also interviewed, does most of the community outreach and large volunteer work parties in another section of the park.

Liz Kearns
Licton Springs Park

Liz Kearns has lived in Seattle for 38 years and was President of the Licton Springs Community Council for 12 years. She has a certificate in Horticulture from Edmonds Community College and has worked as a gardener for 35 years. She has volunteered at Licton Springs (Figure 6) for 25 years and is a Green Seattle Partnership Forest Steward. I walked with her through Licton Springs on a rainy afternoon on May 13,

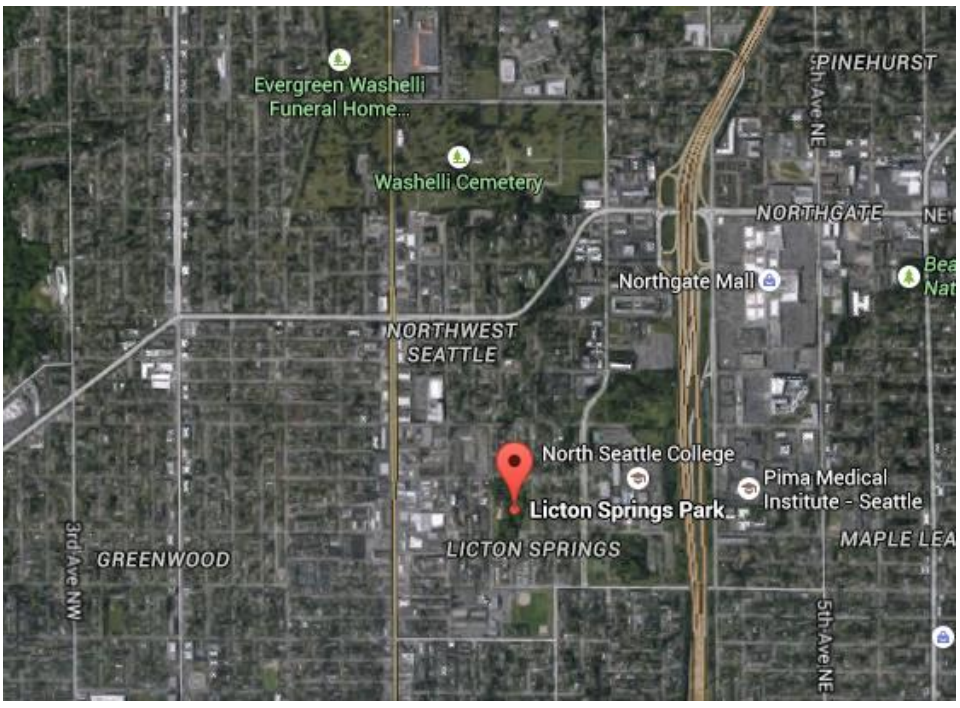

Figure 6. Licton Springs Park. *Source: Google Maps 2015*

2015. "I've been working in gardens for 35 years and I have my own business. I'm semi-retired. I'm 67, so I work part time. I don't think I can ever quit."

The entire Licton Springs Park is considered upland wetland which is very wet, but contains lots of evergreen trees. There are also a lot of natural springs that run through the park that were used by Native Americans both medicinally and spiritually. Liz recalls a time she was walking through the park and saw five Native Americans standing around the spring head, chanting and burning sweet grass.

> As they were leaving, I asked them if they could tell me about their ceremony. One woman said she moved into the neighborhood a year ago, and they felt so welcome here. They weren't from a local tribe. They wanted to do a Thanksgiving ceremony, and to complete the ceremony, they needed running water. To me, that was really significant that 100 years ago the Natives were meeting here, and a couple years ago they were meeting here.

The head of Licton Springs was capped in the 1960's when the land became an official Seattle Park and the management felt that the water wasn't clean. It is an iron ore spring, so the water is orange and tastes metallic, like blood. There used to be lakes here that got filled in with fill from I-5. The Denny family owned this land at one point, after the Natives, and they called it Licton Mineral Springs. Emily Inez Denny wrote a book, *Blazing the Way*, and a chapter in the book is about Licton Mineral Springs. The Denny family tried to sell this land to the city multiple times, but they wouldn't buy it. The Denny family eventually sold it to a private enterprise that bottled the water and sold it medicinally. Eventually the city bought it and turned it into a park.

Liz hosts regular work parties every summer with a Woodland Park Zoo summer camp for teens where they do restoration for eight Wednesdays. She says the kids make whoever is a new attendee jump in the spring during the first work party. The spring runs all year long. The U.W. Restoration Ecology Network has worked at Licton Springs during three different years and one of the groups found a new spring head. Liz mentions that the biggest invasive plant here is Reed Canary Grass. She says every time they clear an area, Skunk Cabbage shows up, which is a native understory shrub that likes really wet conditions. The Olmstead Brothers did a "mini plan" for Licton Springs, and their plan suggested planting Vine Maples and Sword Ferns along the edges of the park, which Liz has honored.

She described a technique for shading out invasives and encouraging native growth that was new to me: hummucks. Hummucks are a group of three core logs that are placed in a triage on top of three layers of overlapping cardboard. The core logs have a jute exterior and the interior is shredded coconut. Sandy soil is put in between the core logs and then a gallon container with an Evergreen tree is placed in the center. This stifles the invasive species and allows Evergreen trees to flourish.

Liz's group has received advice from various hydrologists and wetland biologists that they were able to hire through grants.

> One hydrologist suggested we plant willows, just live stake them, but we're glad we didn't because the environment here would just be totally changed. The other idea was to flood the whole thing. Make a dam at both ends and let it be flooded for a year to kill the Reed Canary Grass, then let the water out and plant native species. The problem is that

> the Reed Canary Grass seeds wouldn't die which is why we didn't do it. Also, the city runs runoff through here, and we can't stop that from flowing. So, we decided to just maintain what we cleared and what we planted. It would take a million dollars to totally clear this park.

Stormwater runoff travels through many of the sites involved in this project, but the small size of Licton Springs (10 acres) and its proximity to Northgate mall and all of the new development happening north of if makes it a very busy thoroughfare for runoff. Most of the water here now is not spring water, it's run off water, and it's not clean. Over the years there has been a lot of sediment build up from the run off, so areas that used to be ponds are now filled in and have turned into creeks. Water travels through Licton Springs then goes into pipes under the streets and then to the sewage plant. But there are not enough pipes to accommodate the flow, so flooding is frequent near the park. Liz says that the city is going to put in two more pipes, one on each side of the street, so that the new school that is being built doesn't flood. The Parks Department and the city have asked Seattle Public Utilities to deal with the flooding many times and now it's finally happening because of the new school.

Licton Springs had a male beaver here for one winter, but he did not return after spring.

> With a grant, we tried to re-introduce the chorus frog. More and more construction occurs north of here and the run off became dirtier and dirtier. The chorus frog is an indicator species so as the water got dirtier, they died. We built a pond out here and put a four foot tall PVC pipe into the ground, turned a soda bottle upside down over the top and we would count the water level by putting cork in because it'll float. We brought in egg sacs of chorus frogs from North Seattle Community College. And we had chorus frogs for one year and then they were gone. We tried to locate the ponds in an area that would be mostly clean, and it just wasn't clean enough. They're still around in the neighborhood, but not here in the park anymore because it's just too dirty.

Liz is very active in recruiting volunteers and getting the word out. There is a kiosk at the park where they keep fliers stocked. In addition, they advertise through the Licton Springs Community Club and will table anytime there is a community event. In addition to teens from the Woodland Park Zoo, other parts of the park are sites that have been "adopted" by other groups that come out annually or more frequently, including Bishop Blanchett High School's freshman class. Liz's group gets a lot of kids out to volunteer which is unique amongst the sites in this project. Liz says, "It was surprising to me how hesitant kids are initially, and then they get really into it." It is important to Liz that good work gets done, but also that people have a good experience and that they aren't bored or overworked.

> We've been having more and more use here. I wouldn't say that the work we do has encouraged more use of the park, but it has brought more people in who wouldn't otherwise come in, so it's been diverse. People are looking to work in a park, working off community service requirements either through schools or court ordered. Our hope is to educate everyone who comes and works with us and to make sure they have a good time. We want people to come and help us. We'd love it if they come back, which doesn't always happen but that's ok. We want them to have a good time, to learn something, to get some work done. We look at the group of people who showed up and think what can

> they realistically do and accomplish in four hours so they can have a feeling of accomplishment, but we don't want to overwork them or bore them to death. Your responsibilities aren't just to get the work done but also to give them a good experience.

Liz clearly excels in attracting volunteers to her site and giving them a positive experience, because she is as committed to the volunteers as she is to the site itself. She speaks to the changes she has seen in obtaining grants over the years.

> I know that in the parks district I'm in, a lot of money goes to Green Lake. We know why. I walk Green Lake at least once a week and I like that it's well maintained. It's too crowded, but that's a good thing. It's popular, it's being used. Grants are a lot more competitive now than they used to be. It used to be that I didn't receive a grant I didn't write. Now, it's so much work. There's no guarantees. One of the reasons Starbucks didn't give us a grant is because they had never heard of our park. No one would notice. Well of course no one will notice if no work gets done!

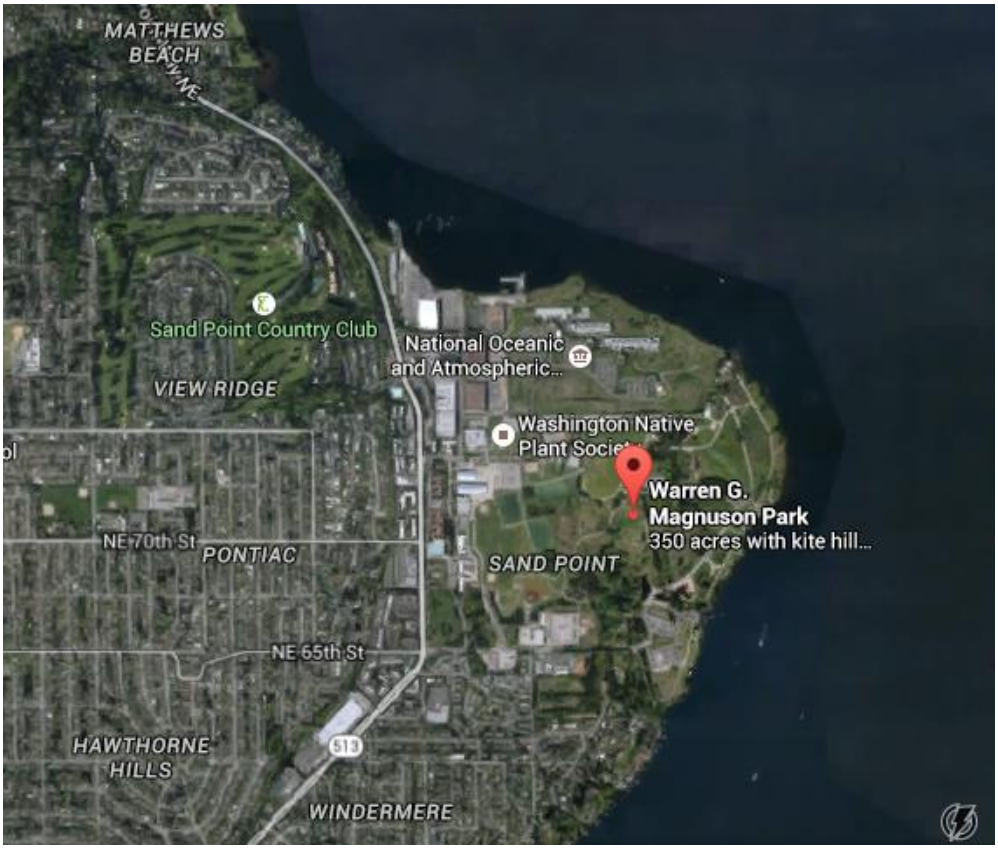

Figure 7. Magnuson Park. *Source: Google Maps 2015*

Tom Kelly Magnuson Park

Tom Kelly is a Green Seattle Partnership Forest Steward and Chair of the Magnuson Environmental Stewardship Alliance. He is also the Magnuson Community Garden Board Secretary, a member of the Magnuson Park Advisory Committee, Magnuson Habitat Committee, and Friends of the Burke-Gilman Trail at Sand Point. He has been leading environmental restoration work parties at Magnuson Park since the late 1990's and has lived in Seattle for 47 years. I met with him one March afternoon at the Center for Urban Horticulture, and participated in a work party led by him for the Martin Luther King Jr. Day of Service in January 2015.

Magnuson Park (Figure 7) was historically used by the Sand Point Naval Air Station for a runway and firing range. The land was given to the city of Seattle in 1976, and was quickly overtaken by invasive species such as ivy, clematis, holly, and hawthorn, preventing natural reforestation (MESA, 2015). In 1999, invasive species removal and native plant installation began by neighborhood volunteers in collaboration with the Seattle Audubon Society. This site presents unique conditions because the soil is so compacted a result of its prior land use.

Jason (Jay) Mirro
Longfellow Creek

Jay is a Senior Resource Planner at the King Conservation District. He is a gardener, farmer, and woodworker who has lived in Seattle for 17 years. He has been working on Longfellow Creek since 2001. Jay describes Longfellow Creek before there was any restoration:

> There were dime baggies of crack and 40s of malt liquor. I got in touch with someone at the city and was asked to help with the Longfellow Creek Master Legacy Trail. We acquired a Department of Neighborhoods Grant, and through a series of community meetings we came up with a master plan. We came up with the design and the concept that one day there would be community art that would go throughout the Delridge and Westwood neighborhoods. These community meetings were a great way to meet my neighbors. Some people hated it, some people loved it, but we all came together. So we have this plan all done, and we have a red line on a map, so we got another grant through the Department of Neighborhoods.

Restoration began in 2002, and monthly work parties were help with the support of the Seattle Parks Department. Jay says that he was picking up trash all the time, and over the night the trash would just come back. The entire site was covered knee deep in ivy. Over time, they slowly eradicated the ivy and put some native trees and shrubs in this 11 acre site. Every third Saturday of the month there's a work party here. Sometimes during the week they would have a group come, but it was mostly just Jay leading his own little project. This was before Green Seattle Partnership and Forterra got involved. There was a Seattle Public Utilities Creek Steward Program. The city had always had a pretty good volunteer network

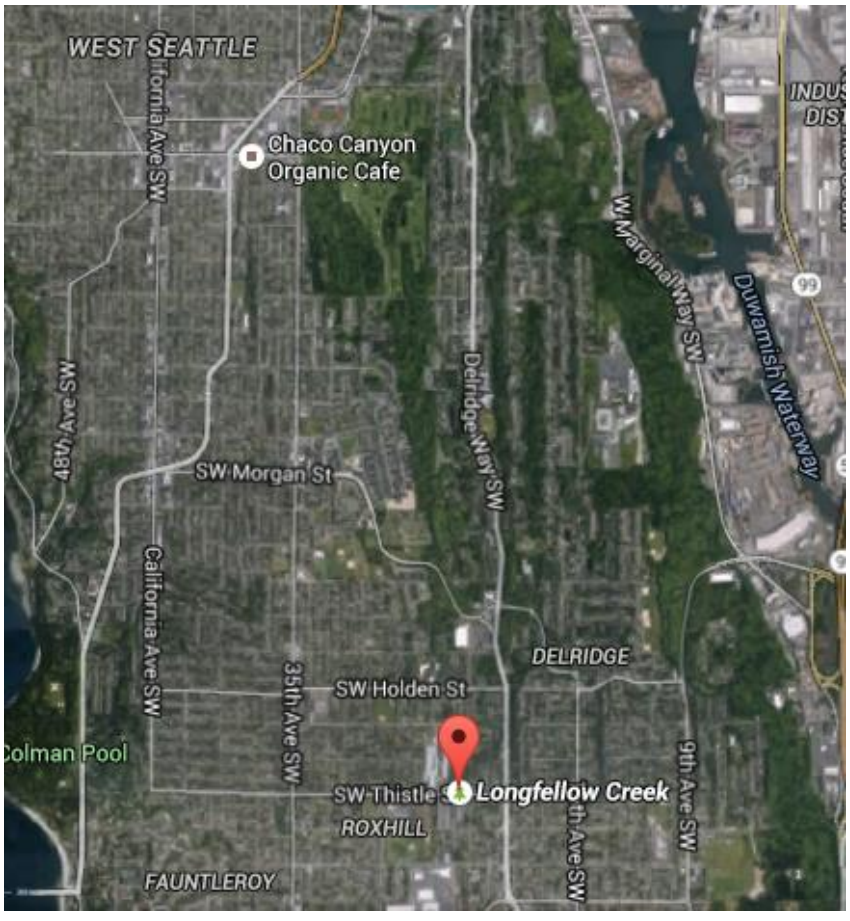

Figure 8. One end of Longfellow Creek. *Source: Google Maps 2015*

where if you needed tools you could sign up. The Parks Department has been great at the very beginning at supplying tools and cardboard. Seattle Public Utilities was very involved with natural areas at the time and would donate plant material to this project.

> At King Conservation District bare root plant sale I would get the left overs and I'd get 3 – 500 plants donated to me. In 2006 – 2007, this became an official King Conservation District project. The only real change meant I was paid. We applied for King County Water Works Grant and we got that which helped us finish this site.

Jay says that the theme here is consistency. "We've been out here having regular events which has allowed us to continue to make progress. One little bit at a time. And it doesn't have to be perfect the first time, we'll replant if we need to. We've been here consistently whether its 3 or 60 people." He says that volunteers tend to be more people looking for volunteer hours than neighbors. It's hard to get neighbors to come out. "Everyone's busy, we're all trying to do our thing, and I don't think many people have time to volunteer."

Jay and I walked through Longfellow Creek on a sunny afternoon on May 6, 2015. At a place the volunteers refer to as Ivy Hill, we saw remnants of foundations of old houses. Jay explains "There used to be 1 acre lots here, and the golf course bought up all of this for a driving range and filled the wetlands. Everyone left Seattle when Boeing laid off 50,000 people so when you leave things alone…this is what happens."

Longfellow Creek, as shown in Figure 6, extends north to south in West Seattle for about 4 miles.

Thomas (Tom) Palm
Discovery Park

Tom has lived in Seattle since 1966. He has led hikes with local trail clubs for 20 years, and has volunteered with many trail maintenance and conservation organizations such as Washington Trails Association and the Mountains to Sound Greenway. He is also a member of the Planetary Society. Tom and I took a walk through Discovery Park (Figure 5) on May 13, 2015 accompanied by his dog, Daisy.

Discovery Park was established in 1974. Stewardship efforts began through the Adopt An Area (AAA) program. Tom began working on his site in 1997. Currently, there are 4 official Green Seattle Partnership Forest Stewards in Discovery Park and 10 AAA volunteers. Tom says:

> We were self-taught. We were amateurs. Lots of trial and error. I've been trying to increase species diversity. Whatever grows here, I'm happy to plant it. There are historic homes here. The whole park used to be covered with buildings and roads. What was too steep was forested or landscaped with lawns. The park was used as a military base, then neglected, then used to house troops again during WWII.

Tom was inspired by a steward who sent postcards to the neighborhood advertising that on a certain day of the month they would be leading a work party in Discovery Park. This was something people could count on consistently. So, he used a similar technique and to date he's lead 54 work parties on the third Sunday of every month without missing a day. Tom mentions that the forest stewards in the park have been pushing for ten years for a restoration plan for the

park because currently there's no guiding plan. Every group that works here has their own plans and Seattle Parks has to mow certain areas, and they also do their own restoration which is unusual. He says the Parks Department is totally in charge of everything that happens at Discovery Park because they own the land. Tom describes how a professor of mine at U.W. has influenced the way he does restoration.

> Kern Ewing inspired me to not worry too much about doing a definitive one size fits all plan for restoration. In the Union Bay Natural Area, they'll plant the same species in different zones and see where it will thrive to understand the different zones in the site. They're willing to take a large loss to see what survives in an area. I try to do that in Discovery Park.

David Perasso
Martha Washington Park

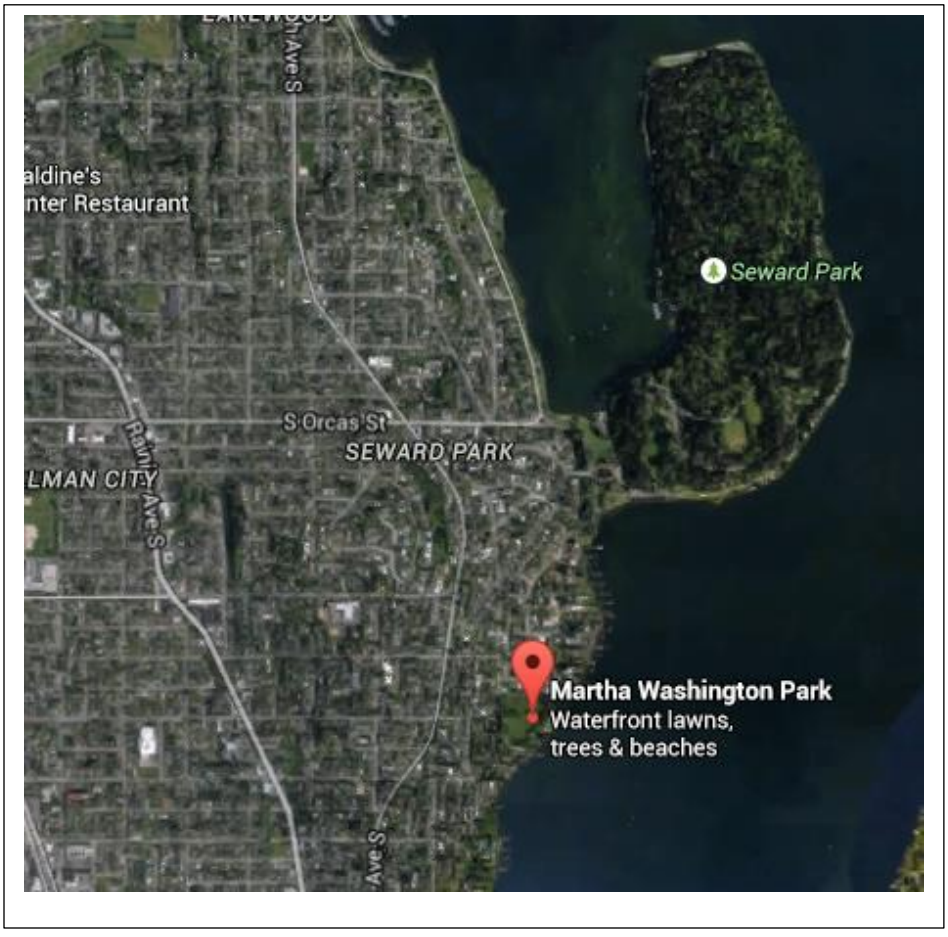

Figure 9. One end of Longfellow Creek. *Source: Google Maps 2015*

David has lived in Seattle for 11 years and enjoys hiking, music, and dancing in addition to restoration. David has a background in biology. "Mostly I'm a gardener." He says, "I learn as I go."

He became interested in Martha Washington Park in 2012 because he was trying to find the Gerry Oak which is native to this area. When he initially came, the park was covered with blackberry, ivy, holly bushes, and mountains of weeds. He couldn't even find the oak but he knew they were here. "I felt it's embarrassing that Seattle has these oak trees and they're so overgrown," David says:

> Native Americans would burn areas under oak trees because if they didn't, conifer trees would come up. Gerry Oaks are special trees, unusual. Whenever you find oaks in WA State, it's because Natives burned the area under the oaks to prevent other things from crowding them such as conifers (Cedars, Doug Firs) which aren't productive for food.

> This burning allowed berries and Camas to grow under the oak trees, in addition to fruiting plants, strawberries, blackberries, salmonberries, service berries, and acorns.

David says that there are records of Indian Villages along Lake Washington that only happened because places were burned. This history and the presence of oak trees made him want to start taking care of this site.

> A vast amount of the forest was regularly burned before Europeans came. Most people think the way our forests look now is how they originally looked but it's not. Burning was done in a lot of places. We need to burn. We've lost a lot of annual species that only survive in burned areas, such as butterflies, birds. Yeah soot and particulates are an issue with burning but we'd have a greater diversity of wildlife. Because we're not burning, we get thick understory which gets so hot even big trees get burned. If you burn through here every 3 – 4 years though, you won't get density like this. And fire will only burn shrubs and the big trees are okay.

My interview with David was the first time I had discussed fire and burning regimes during this project. His interest in native human-land relationships made this interview a great asset. In addition, Martha Washington Park is the only site involved in this study that has Gerry Oaks present. The other sites are generally wetlands, coniferous (Doug Fir, Cedar), or deciduous (Big Leaf Maple, Alder) forests. David leads monthly work parties, and is in regular contact with the Duwamish tribe. He says, "We went over and talked to them [Duwamish Tribe] about this area and what its' relationship to them is. There's a family who has an intertribal canoe and they landed here ceremoniously in 2013 and 2014 and will do this again on June 14, 2015."

Key motivations, ideologies, and tensions

While all parties involved in this project are committed to restoration of Seattle's parkland, the interviews I conducted revealed that there are varying motivations and ideologies that drive restoration.

What motivates leaders of community-based restoration projects?

- Local greenspace
- Equitable greenspace
- Restoring historic ecosystem & human-land relationships
- Community expectations
- Showing what is possible & creating a legacy

Local Greenspace

The top motivation for people to be involved in restoration is to create local greenspace. "Greenspaces are the fabric of the city, they enrich our lives, they reduce stress, get us outside to walk. We started this work because there was a lack of what we value….an abundance of woods" (John Barber). Creation of local greenspace activates a neglected area and reduces crime; contributes to a healthier neighborhood for all, and allows people to meet their neighbors and build social capital.

> If you want people to avoid urban sprawl, we have to fill the human need for nature and ecosystem services near the urban core. Among the benefits are crime reduction and also giving people places to walk and maintain physical health. Improving public property can also increase value of private property, certainly value of homes and apartments nearby would increase" (Tom Kelly).

Wallis Bolz explains the value she sees in improving in public property as "marking that its public property. This property preserves a sort of quasi urban rural feel of the neighborhood. It's green and leafy, and preserves neighborhood character and important wildlife habitat. This is good for the neighbors, to see trees. People use this space actively." I liked how Wallis said that actively restoring a space marks that its public property. This is a call to action for people to feel empowered people to be involved, because the land is everyone's business, and everyone has a stake in it. Jay Mirro echoes Wallis' sentiment about the importance of local restoration projects to the neighborhood:

> Places like this present an opportunity for folks to get out into nature without going into rural King County. They are still here in the city. Restoration here is a chance for people to think globally but act locally. Projects like this are how you can not only improve where you live, wildlife habitat, salmon habitat, but it's also human habitat, we live here too. We are walking on a trail that thousands of people have walked on. In 2001, I moved to Delridge. Longfellow Creek was here and I was like wow this is awesome, there are a couple little trails here. What can I do? I'm part of the community, this is my home and there's this great treasure: Longfellow Creek.

Jay perfectly displays the "go-getter" attitude of all of the people I interviewed. As soon as he moved to Delridge, he wanted to see how he could be an active member of the community. In addition to opportunities for ownership and investment, local greenspace allows people to connect with nature without driving a far distance. Peggy Gaynor says:

> Part of it is not controlling people but educating people…getting them back in contact with nature, particularly with inner city kids, getting them more informed about nature and ecology and succession. For eight years, the Friends of Madrona Park had inner city schools come and set up plots to test and design for restoration. And it's incredible how much land got restored by this 'kid power.' It was very successful. Hopefully some of these nature deficit disorders will get some enlightenment. There is something in peoples' spirit that they want to see healthy nature near where they live. We have beautiful national parks and you can drive to it, but people aren't happy with that. They would like to see it in their neighborhoods. That's how the phenomena of the 'Friends of' group happened. There is a huge desire amongst urban dwellers to see wildlife, walk through an urban forest without having to drive into the national forests and parks. That desire is there and has been there."

I agree with Peggy's observations about peoples' desire for local greenspace. We want nature incorporated in our daily lives, not just a vacation spot. We want that daily exposure. When I asked David Hutchinson what keeps him coming back to Discovery Park, he jokes that he just has nothing else going on in his life. He then goes on to say, "It's what I've always done. My family had a huge garden. And I grew up in the woods with my friends. It's what I'm used to. I'm an immigrant, so this is where I feel at home. I live a block away. I moved as close to the park as I could. It keeps my sanity to be here."

David goes on to say:

> We badly badly need forest in Seattle. We need to have native vegetated open spaces that are good for wildlife otherwise we won't have contact with those critters. We've just got a selection of species that do well with humans and disturbed habitats. There are so many we don't have enough of in our parks. Also, the urban citizens need a space where they can be active while communing. And the more intact the more complex and the more protected probably the better experience the public will have. People don't know why they enjoy things and they don't know why things are the way they are.

Tom Palm says, "As we're getting more crowded in a city, greenspace is important to the sociology of the area where people live, in addition to species diversity and maintaining the greenspace for recreation."

Whether it is re-connecting people with nature in their neighborhood or cultivating a sense of ownership through marking that a public space is indeed public, all stewards interviewed are motivated to continue their restoration work by providing thriving, local greenspaces.

Equitable greenspace

One restoration leader I interviewed spoke a lot about her desire to provide equitable greenspace. These parklands where the stewards I interviewed work are open to everyone and

free for use, which is a rare type of space these days. Mary DeJong says, "This land is for equity. During the summer, the kids from Hope 6 [nearby affordable housing development] bring their families to work parties. We have volunteers from single family homes, subsidized housing around Cheasty, and urban schools in the neighborhood." Mary goes on to mention that as less and less people go to church, which has historically been the place where socioeconomic status doesn't matter, greenspaces are becoming the place for that. I'm sure equity is important to other stewards I interviewed, but Mary is the only one who spoke so directly about it.

Restoring historic ecosystem & human-land relationships

Stewards are both motivated by re-connecting volunteers to nature, and restoring ecosystems to what they looked like before intensive settlement. Peggy Gaynor states,

> I purposely developed over sized ponds near the roadway and sidewalk so people can see the creek and realize it's here because no one knew it existed prior to this project. I wanted to make it visible so people start to re-connect and realize 'oh there are creeks in the middle of the city.' We found an otter living in one of the clay pipes we exposed. It's incredible, the wildlife that has come back. We have river otter, beaver, eagle, muskrats, all through the city, and people like that. "Our wild kingdom in the city."

Regarding her ecological restoration process, Peggy states,

> I set a stage, for the ecological succession. You don't go into this with a lot of ego. You don't do these things with the idea that you're putting an ego stamp on this thing and it's going to stay this way forever. It's more interesting to me to see how the space changes and transforms over time. And people respond to it differently as it grows older.

Liz Kearns says, "I love plants, and I planted a lot of these [here at the park]. I enjoy doing it. We have a small group of people who come just about every month. We have a four hour work party. We usually work for three hours then take a lunch break then work for another hour."

Going off this "wild kingdom in the city" idea that Peggy presents, both David Hutchinson and Walliz Bolz are very motivated to continue their restoration work by providing habitat for birds. Wallis states, "I come here because I love the birds. I want to create and maintain habitat. We're not seeing swallows anymore."

David Perasso, on the other hand, is particularly interested in peoples' relationship to the land, not a particular type of animal. He asks,

> What is the relationship of the people going to be to the ecosystem? For example what keeps sedge fens going in Scotland is that they're harvested. When they stopped harvesting the sedge fens to build thatch roofs, the sedge fen got overrun with willows. Basically the sedge fen stopped being a sedge fen. Harvesting was a key relationship. Same thing in prairies: When Native Americans dug up Camas, the soil was loosened which allowed the Camas to regenerate. Also burning of prairies allowed annuals to grow. When the relationship is broken, you have to weed and spray, etc. We need to restore the relationship by asking 'what kind of ecosystem works for the relationship?

> That's the approach they use in Europe for restoration. Here in the US, we think it's about bringing an ecosystem back to some pre idyllic pre European condition. But we must realize that there has always been constant change and constant interaction with people since we have been on this Earth. Ask not about tree canopy for a target goal, but what type of relationship do we want people to have with that wetland? Maybe it includes education or harvesting. It is important to determine the ethnobotanical use of all the plants you're putting in and provide appropriate activities such as harvesting. There is something missing if I say "ok I'll take this natural area and fence it off from people and put trees in there and not let people in." We do need areas like that, but one of the things that I think is important about nature is restorative properties for people. Not that they just think it's nice, but that they interact through planting, maintenance, harvesting. So if you really want people to develop a love for something you've got to give them something to do. If we want people to have a commitment to this forest, we have to give them something to do. Humans have always had a role in the ecosystem, every bit as important as coyote or wolves, so why not restore that relationship too? I get in arguments with people about that. People think the ecosystem needs to be set back on its historic path…but I say which path? We make choices in planting cedar trees, in everything we do. Some people say, invasives will win over in areas, so why not let them flourish?
>
> I asked David why restoring the relationship is valuable. He answers,
>
> I think it makes sense. To me, that's what restoration is about. Restoring relationships. Its not a painting where you take the dirt off and restore the colors and it'll stay that way forever. We might restore some small patches of land that are tended in a way that is reminiscent of what went on before. That is the best we can do. In the US, the idea is we restore things back to this pristine wilderness. But if you read *1491*, you know there wasn't a pristine wilderness. In Europe, the aim is to restore to "pre-industrial cultural practices." Because first of all, there wasn't any 'pre-European Europe. And In Africa, restoration is all about wildlife preservation. There was a place in Africa with lions and bushmen. They had a relationship of respect. The bushmen had killed an animal, and a pride of lions come up to take it away and the bushmen talk to them and say this is our kill. And the lions back away. The bushmen knew their place and the lions knew their place. Then all of this is disturbed and lions are people and animal killers and bushmen are excluded from the preserve… but aren't they part of the ecosystem? There are prairies in the south Puget Sound that the Native Americans have no hand in managing. Yet their ancestors are why it's there. Instead it's managed by PhD's. What if you had the prairies managed for food production rather than species? We care here in Seattle about local food production, but what about native food production?"

David's questions of "what are we really restoring for?" is quite compelling. This discussion about restoring relationships with the land was fascinating to me, and I would love to research it further. Humans are an integral part of ecosystems and landscapes, and have been for a long time, so considering their role when restoring is a good idea instead of viewing humans and nature as so separate.

Community expectations

Another key motivation expressed was community expectations. Wallis Bolz says, "I organize people well. The community expects me to. I am proud of the effort here. The neighbors expect me to continue to organize this effort." When I asked David Perasso what motivates him to keep coming back he says, "A mix that I'm interested in what I'm doing and also keeping the commitment that I've made. Also keeping the end result in mind." Meeting community expectations is a motivator for me at Yesler Swamp because my project does the most consistent restoration work at Yesler Swamp of any other groups. Additionally, we bring a lot of volunteers so we always get a lot of work done. Expectations motivate because I don't want to let down the rest of the Yesler Swamp non-profit board.

Showing what is possible & creating a legacy

One of my interview questions was: What value do you see in improving public property? People spend anywhere from 5 to 20 hours per week at their site on average, so I wanted to understand why people put that time and energy into a public space rather than, say, their own private garden. John Barber says,

> I'm an idealist and a visionary. I like people interacting with nature. To me, it's about peoples' experiences. Creating appreciation of the place. My appreciation was cultivated next door at Leschi Park, a traditional park. But the natural areas provide a different experience and I think higher quality because I think people do seek often the true northwest. And there's very little left of Seattle that's true like this. Hardly any of the shoreline is left like this. Hardly any of it is left.

I agree with John that cultivating appreciation of the place and understanding the historical landscape of the Pacific Northwest is so important. When people have a particular park that is special to them, they have empathy for other parks and are more likely to be respectful users of that space. Tom Kelly says,

> I like the idea of ownership and investment. I'm a neighbor, close enough for it to be an amenity for me and at this point I've got a sense of ownership for areas where I've worked and lots of what are in effect pet trees and plants etc. If you apply Maslow's hierarchy of needs it is probably mostly around the self-actualization level, although there is also a bit of the social or esteem part too and the neighbor part adds a bit at the security level due to things like real estate value enhancement. It is also part of what Victor Frankel called man's search for meaning. Over all it would provide for human need to experience nature for things like stress reduction, spiritual welfare, and psycho social benefits. Providing those will require that it remain somewhat tranquil. This should add the benefit of allowing people to tolerate living in dense urban area and should help reduce demand for urban sprawl or need to burn fuel in order to reach other areas which satisfy human needs for nature. In addition it would provide good habitat for wildlife (partly so people can experience wildlife) and provide more or a better level of other ecosystem services than at present for things like temperature moderation, air cleansing, storm water control, and climate change reduction. There is also value for society if one thinks that the ideal is having people participate. Ideally people contribute to society somehow and don't only do it begrudgingly. In a minor way it is a bit like voting in volunteering or other activism it

> can favor what one wants. One can imagine a bleak future if people don't do more than the mandatory things like paying taxes and become even more disengaged and less in control than they are now.

I like Tom's analogy of participation in restoration to voting. When neighborhood groups show active stewardship of a space, this tells decision makers and visitors that the people who live here value greenspace. Wallis Bolz says,

> This work models for people what can happen in other areas… like you can do this. It brings neighbors together and they talk about it. It introduces people to what's possible. This work offsets relentless development. We don't have enough property in parks or greenbelts for the number of people who live here. It's intensely valuable to the neighborhood. It's valuable to me because it keeps me here. I have a lot of stress over the pace and type of development that happens here. There are neighborhoods were the topography doesn't matter anymore ore because there are no hills and there are places that are so bright because there are no trees and trees are an essential feature of the Pacific Northwest. Seattle doesn't have very many big trees anymore. Projects like are an opportunity to have big trees.

Similar to John Barber, Wallis is motivated to engage in restoration by maintaining and restoring historical landscapes that used to cover the Pacific Northwest regions. Restoration of our forests prevents our landscape from turning into "any town U.S.A." with no defining characteristics. Peggy Gaynor says,

> Every project has the potential for interesting restoration. Whether you are restoring for wetlands, creeks, or western Washington prairies. You have to do restoration holistically and take in the human condition wrapped around ecological restoration. It's endlessly fascinating and interesting. I learn a lot by every project. I've just been doing this for a long time because I believe in it and people believe in it. The most fun projects are with community groups because you get to see people light up. You get kids involved. There's a psychological need for that kind of release. Our work totally involves humanity, emotional and psychological wellbeing of dwellers who need a place to "let it all hang out." Urban design is crisp, and neat and do not do this and very controlled. We create chaos. If you think of nature as having a certain time of freedom, it's an ordered chaos. I enjoy the kind of people who are willing to do all this out of the good of their hearts…amazing and inspirational people. The best of clients. Part of the succession is not just ecological but the people too, if members of the community group moves away. I hope your generation will continue to take on these things. It takes professionals who have an ecological design bent. I don't wait to be told what to do, as some consultants do. As a trained professional, you're brought in because you've got ideas, so I come up with ideas and alternatives. I see opportunities that other people didn't see.

Peggy describes why working on public lands in particular is so valuable to her,

> The value of doing public is that it reaches so many more people for obvious reasons. I've done private work, and it's not nearly as satisfying. You reach a limited audience because the work is is locked away on private property. Here, the audience is vast and ever-changing. Way more visible, provides examples for people to do in their private

> yards. People have asked me how can I do something like this in my yard? These become alternatives to grass, they inspire people to do something similar on their private property. Much more effective just due to their accessibility and visibility. And I do like to see the cross section of humanity passing through here rather than just one family or one corporation. There's just no comparison with public.

Mary DeJong says,

> We are meant to be connected to the earth, fundamentally. Seattle greenspaces are fairly undeveloped. We have urban wildlife corridors but they are buffers between residential zones. They need to be active spaces. We're the fastest growing city. Equitable greenspace is key. Restoration for restoration sake alone isn't going to get us anywhere."

Mary describes why restoration is so important for this region in particular. With so many people moving to Seattle, urban areas are getting increasingly dense, and people need quality space to recreate and find reprieve from the hustle and bustle of urban life. Jay Mirro says,

> When there's enough people who look like they care, people start to care, and there is clearly less garbage. Not everybody is told to not be a litterbug. I love this place because this was my backyard, my little spot. Personally, I came here multiple times a day, walked my dog, take my kids. I like watching this change and grow. No matter where I go in life, I'll always be able to come back to this spot and say I helped plant those trees and I can say I made a little bit of an impact. It's not just for me, it's for everyone. Even for the people who will never volunteer here."

The value of putting all of this time into public space is that it will persist so long as there is a committed volunteer base taking care of it. If you are just working on your own private yard, once you move, you will never be able to visit it again. David Perasso says,

> I'd like this to be a really beautiful place. I want to show what can be done. I'm motivated by the challenge. This is a really hard place to restore. I'm motivated by the people who care. There's a value in community. You're with people, doing it together. It's fun. You have a responsibility to them, they have a responsibility to you. You all have a responsibility to the park. If I have a private garden and I go away, the private garden is dead. People will carry this park effort on."

Tom Palm says, "I am consistently brought back to the site because I enjoy seeing it change over the years because I've been involved for so long. Some of the areas have no invasive species now and are self-sustaining." People come back time and time again because they like to see how the place changes and how the fruits of their labor are doing. They are also held accountable by the other people who work at the site.

How do these motivations shape ideologies regarding ecological restoration?

Now that we've discussed what motivates the restoration leaders, this section will compare and contrast results of the interviews by the following categories.

Emergent Themes:

- Role of community in restoration and maintenance
- Competing uses
- Trail design
- Relationships with Seattle Parks & Recreation and other collaborators

Role of community in restoration and maintenance

All people I interviewed agreed that maintenance is a never ending stage of restoration. However some people were more motivated by social capital and wanted to bring as many people to the site as possible so they can experience the site, be educated, and learn about the work. Other stewards preferred working in core groups of committed and experienced volunteers because the likelihood of error is greatly decreased. These stewards were motivated more by the ecological benefits of the work and building social capital within core groups. Of course stewards fell all over the spectrum too.

Stewards describe their opinions on maintenance:

John Barber says, "This ecosystem is not self-sufficient at all. One neighbor came out here everyday and worked for hours. We want to create authentic Pacific Northwest lowland nature. Something that can be self-generating. What we've learned is that you need to keep nurturing it, pulling out the weeds."

Mary DeJong says, "There will always be maintenance. Will never be a pristine wilderness."

Tom Kelly says, "I'm not sure it would ever be done and think there will always be various impacts and some risk from human use. Maybe it would be more of a continuing process than an ideal state. There will always need to be some maintenance inputs."

Peggy Gaynor says, "It took up 100 + years to screw this up, so it's another 50 – 100 year process to put it back."

David Perasso speaks of the different kinds of maintenance required for different ecosystems.

> Self-sufficiency works in some cases such as the cedar forest. It's a climax forest. There's still constant change in the climax forest, but it more or less it maintains itself. Some of the more interesting ecosystems require constant disturbance. These are disclimax ecosystems. Examples include prairies and sedge fens. They may require a disturbance that is part of a natural regime (fire, thunderstorms, etc) or might be a human interaction (fire, mowing, weeding, harvesting etc). Another example of a disclimax ecosystem is the ecotype that is predominately Alder and Salmonberry that exists on gravel beds of our rivers. They exist because the river raises and falls according to a flood regime. Another disclimax ecosystem is a pond and stream that has a beaver community because the beavers prune vegetation. Or a farm where we plow, water, and harvest.

The stewards describe their opinion on leading volunteers:

"When you're walking with a volunteer group, imperfection is inevitable. Working with volunteers is challenging as they are a threat to new, fragile plants. Restoration is truly learning from mistakes" (John Barber). The social capital building component is important. John Barber says, "We provide coffee and cookies to make work parties a social event." John speaks about attempts to involve volunteers in their work. "We mailed a survey to neighbors to encourage participation in park planning and received a less than 10% return which was disappointing."

Currently, We have a consistent core group of eight people, but we have other groups come in i.e. United Way, Starbucks, PemCo, Microsoft, other businesses.

Peggy echoes John Barber in saying, "We have a core of 8 to 12 people who always show up." Wallis echoes too, "Most work parties we have about 12 people. Same people who come to every work party."

Peggy Gaynor reflects on working with the land versus working with people,

> The human race is the great unknown in these situations. Restoring habitats is actually pretty straightforward. It's how to get it through to people…all of the projects I've done, the biggest hurdles have all been thrown up by people, not by the site or the conditions. The habitat comes back faster than anyone thought it would. Think about the Elwha. That is a fabulous study of how people can stand in the way. It took over 20 years from idea to completion of the deconstruction [of the Elwha Dam removal]. Now that the dams are out, the recolonization of the tributaries by salmons has been far faster than expected. The sediment coming out and creating a whole new estuary is phenomenal. Getting it through the politics and permitting and all the naysayings and fearmonging…it's unbelievable. Every project I've ever done has had naysayers, fearmongers, saying 'no you can't do this.' So people are the main interesting element in all of this. People are the ones both promoting and preventing. We're a conundrum, we really are. Nature is resilient. People are a conundrum.

These are inspiring words from Peggy regarding nature's resiliency and ability to bounce back (to some degree) given what humans throw at it.

Tom Palm mentions that some stewards in Discovery Park like to work as loners. David Hutchinson says,

> We have a group of dedicated stewards who work on my site, and we meet for a couple hours on a Friday morning. I work with mostly the same people every time because we like each other and work well together. It's very hard to get new volunteers. We try to get people who are site specific and committed. Tom likes to get groups of people who will bring and spread woodchips, do mass plantings, mass weedings, but I find that too industrial. A lot of things go wrong when people are poorly trained to plant. And there's a high percentage of loss when planting is done in big groups so I'd rather have a few people who get more trained to do high quality work. We got about 7 people for my site. I'm trying to get more women because we've got a whole bunch of geezers roaming around, but we need more lady geezers.

David asked if I had been asking stewards if they have more male or female volunteers, and I said that I didn't think to ask that question. David goes on to discuss the differences he speculates between female and male volunteers. "In staking shrubs or young trees, guys don't care so much how tightly the tree is staked up while women make sure the tape is not too tight. Women like to stake plants because it's a nurturing thing. And women like to plant. It's all speculation, but I think it would be very interesting to study."

Liz Kearns discusses how education is a prime motivation for her work at Licton Springs.

> Were teaching people, I've already talked to the science teachers for the new schools going in. When the Indian Heritage School was here, we shared information. They knew a lot about this site and that was super interesting. They [Native Americans] have a different respect for nature that I really appreciate. There's a group called Terra Forma and they bring kids, ages 7 – 11, and they work here. One year they made bat houses. It's a way of getting back to roots that a lot of people don't even know we have. The kids here last Saturday were from Shoreline. Most of them were from Indonesia. They said in Indonesia going outside is too hot. So we don't do yardwork. So educating people motivates me in addition to getting a little dirty. Just getting a little bit of dirt underneath your fingernails and realizing you can always wash your hands. The piles of weeds that we generate….I wanted to put the piles outside with a sign that said we did this and you can do it too, but Seattle Parks wants them out of site.

Whether stewards like to work alone, work in core groups of experienced volunteers, or constantly engage new people and educate them about restoration, they all do important work for our forests.

Competing uses

Ideas regarding the ideal use of restored space varies from a desire for active recreation, to passive recreation, to limited human access. Peggy Gaynor describes the differing attitudes she has witnessed regarding access and use of parkland. (Active recreation is sports fields). Peggy doesn't take a particular stance on any of these different interests, but rather describes them objectively based on her observations and turns this into a call to action.

> You get these interest groups…factions in society…everybody's fighting over a limited resource [parks].You get the view people, the sports people. Some want active playfields for baseball and soccer, others want trails. People are resistant to change. The latest fight is on Cheasty…big fight. They want to develop it as a mountain bike park, much to the dismay of the people who are trying to restore habitat and natural areas in the city. Parks and Rec until the past 5 years was very focused on active recreation. Here [Madrona Creek], the Friends of Olmstead Park said 'you can't take out the 'greensword,' (referring to the grass). Ravenna Creek was a contentious battle between the soccer people, the baseball people, and the creek people. It got ugly. We're struggling over limited greenspace. We need more parkland in the city as the population grows. Who knows what will happen in the future, the debate still rages…maybe this will become a ball field. Some people feel the Parks Department is turning their back on recreating a natural area in favor of creating a developed park. This just tells me that we need more open space. How do we deal with an enlarging population with all these various interests? All this fighting over a smaller and smaller piece of the pie. It'll be interesting to see in another 50 to 100 years how these things work out."

John Barber describes his ideal use of Frink Park,

> It gives a true nature experience. The neighbors love it. Many of them walk there everyday. There's just a problem with kids doing drugs. We changed the hours to avoid late night beer parties. These spaces are more for our kind of mental spiritual…quiet

> enjoyment of nature and experience with nature. It's not built to have big scale activities. People like to come here to be in solitude. Some people are obsessed with CPTED (Crime Prevention through Environmental Design) and don't want shrubs. They need to see everything. I think when peoples houses are looking from their houses thast unnecessary. CPTED prevents the shrubbery you need."

John Barber describes why airing on the side of less access is more appealing to him:

> We want people to have access, where they can enjoy the nature around them. At the same time we don't want them destroying nature because the new plants are very delicate. We are creating something for the future and, in fact, the volunteer work by the people who are doing habitat restoration in Seattle is much more difficult than I think the general public realizes. When we plant plants, many of them die because conditions aren't right or other factors.

This shows that John thinks about restoration from largely an ecological view. He cares most about making these spaces thriving native ecosystems. Joanna Nelson de Flores offers a different perspective on access into restored spaces, "Some people are opposed to access. Forterra is not. Think about the urban context. Damage has already been done." This contrast between John and Joanna furthers the argument that more greenspace is needed to accommodate these different needs. Mary DeJong describes what she sees as "Harmonious rather than competing use: "We are seeing people recreating in it, walking dogs, running…there is environmental education, people use it for commuting because it's right next to light rail." I think it is best when multiple uses can be accommodated at one site to satisfy the largest amount of users.

Tom Kelly says,

> People don't need access to everywhere in the park. Hopefully there will be some good sized areas without much interior fragmentation to allow wildlife refuge and near natural vegetative state. Hopefully it would be largely self sustaining with plantings reproducing and preventing establishment of undesirables although some maintenance will certainly be needed. It could be that climate change will make some present native species unsustainable or favor some desirable non native species.

David Pereasso says they face an issue with off leash dogs at Martha Washington Park. A similar issue was expressed by Tom Palm and David Hutchinson at Discovery Park. "Big issue in Discovery Park is should it be an off leash dog park or should we try to save the master plan. There are so many people who want the park to be an off leash dog park because of the wide open spaces" (David Hutchinson). Part of Martha Washington Park is for well managed conifer forest. David says,

> I think it's cool when people can access a site, but people will stomp through here with their dogs, which is a huge problem. We also had to remove a homeless person from here, which I know is controversial. Trails in here are controversial. I'd like to open some of it up, but not all. Martha Washington Park is unique because we have little itty bitty natural areas and a huge park surrounding it. We don't have a deep buffer between the natural area and the area people are normally in. Weeds and people come in. We don't have an area in the center that is wilderness separated from that.

Tom Palm says, "There are many different groups. The bird people will go ballistic if there's any mowing or restoration during birding season. It can get kind of mean. They accuse restoration people of slaughtering birds. What we wanted to do is come up with a plan to determine what should the habitat be in certain areas, what do different species need?" David Hutchinson adds,

You can't work in zones where there are migrant birds nesting. Everything has to stop on March 1st. It's a regional park has bioregional importance. It's a facet of Cascadia. There are unique species here that people come to look at. Most people just want to run their dog off leash, jog at top speed, talk as loud as possible on the cell phone. I see people talking on the phone and their dogs off leash. Volunteers aren't respected and they don't have any power. Its amazing how many volunteers don't go postal. Civility is a big issue here for volunteers. Some can do it and some can't. Many people let their dogs run off leash. We have such wide open spaces here. There's always been proposals, ever since the beginning in 1974, to put ball fields, driving ranges, many different things in this park. We have a master plan from 1972 pretty much calls for no development, with very little active recreation.

Given all the time, energy, and thought that committed volunteers put into restoring parks and making them nice spaces, it is so frustrating when people blatantly break the rules or are disrespectful. "People and dogs wander endlessly across the area every hour of everyday and you can't do much about it. Some social paths we try to block off with logs and woody debris" (Tom Palm). Tom mentions the threats that constantly face Discovery Park everyday and the importance for persistent active stewards.

> Since we live in a democracy, there could be a voting majority that turns Discovery Park into condos. So it's important that people find this land important. There's a big push in city hall to re-purpose the big buildings here to be big buildings for chamber music but that is totally against what the park is for. Yet voices in city hall are considering it. That's just one of many many threats over the years. Who knows when someone will get traction for plans like this. A lot of people think the park is barely used at all they think it's just a private playground for people playing in magnolia. But people come from everywhere.

Trail Design

I learned about different ideologies governing trail design. Some people preferred intimate paths, others preferred wide trails that were more accessible and required less maintenance. John Barber says

> We want people to have access, where they can enjoy the nature around them. At the same time we don't want them destroying nature because the new plants are very delicate. This can be very discouraging. We are creating something for the future and in fact the volunteer work by the people who are doing habitat restoration in Seattle is much more difficult than I think the general public realizes. When we plant plants, many of them die because conditions aren't right or other factors. And we have had problems with the Parks Department coming in and destroying our plants because they think we need to clear paths. Too much development of trails, and you take up space that could be nature. It's hard to enforce staying on the trail. We don't want our hard work destroyed. Our plan

> was half approved by → Parks, mainly due to concept of trails. We wanted minimal impact, wanted people to be grasped by nature (3 feet maximum width). Parks wanted 4 feet wide paths, that were gravel and had extensive clearance. They went in and built these trails without collaborating. We didn't want to encourage foot traffic through certain areas. We wanted a dirt trail, not this developed. The main experience was supposed to be a circular trail. A lot of the early enthusiasts enjoyed the untouched nature. (i.e. not gravel). We have also had controversy about building railings or not because existing trees would have to be disturbed. I don't know anybody else who did as much planning as we did. We like the process we have: go to community, respect them, ask for their opinion, and plan with their opinions in mind because we involve them to begin with. The main consensus was we treasure our wetlands, nature, and the narrow intimate dirt paths.

Tom Kelly says, "Well designed trails would allow elimination of social trails. Some sort of barrier physical or psychological would be along edges to reduce human intrusions into interiors except for maintenance work. The barrier might be thickets, thorny plants, woody debris, or something else." This is what Tom Palm and others have done at Discovery Park to discourage social trails. Peggy Gaynor has a different take on how to design trails. She says,

> We try to set up pathway systems that make sense…with viewpoints, so those interactions are encouraged and allowed. But inevitably there's little side trails, but I'm fine with that. I'd rather see people exploring, especially little kids. As the landscape matures, the human patterns change too which is all part of the succession and the evolution. We're not trying to impose any kind of behaviors. We do have habitat types in mind when we plant and sometimes those stay fairly in line, and sometimes they change, which is fine too. You're just setting the stage…there's not the ego. People who like to set things more in concrete, that's a very different design attitude. People think it's been like this all the time. People think it's been like this forever…The Friends of Madrona would like to do a before and after picture.. and 20 years later it'll be different again. When you try to control what people do in a space, it doesn't work anyway. We do try to avoid nefarious activity. You want people to feel safe. So people can see head of you and behind you. People used to not go into this park at all because it was clogged with laurel and holly…like going into this dark claustrophobic, nefarious place."

This lack of disdain for social trails is definitely not echoed by anyone else I interviewed. This take on social trails is consistent with the "ego-less" design technique that governed the Madrona Creek restoration.

Wallis Bolz explains why gravel trails are more favorable. "I'd be totally in favor of a gravel trail. Because the existing trail (dirt) requires constant maintenance. I'd like a Parks Department gravel trail. However, I don't want more trails because it bisects habitat."Jay Mirro and David Perasso also speak favorably about the gravel trails. "The smaller trails get overgrown faster, require more maintenance. I can see why the Parks Department prefers the larger ones" (Jay Mirro). "Every trail should be built to park specifications. However access paths are also necessary. We are never going to build a trail in here, however we may have an access path for maintenance. A trail is a 4 foot wide thing that takes a 2 year planning process" (David Perasso). Still other stewards enjoyed the wide gravel trails because it promotes the highest amount of accessibility, and for those motivated by creating equitable greenspace, this is important to them.

Relationships with Seattle Parks & Recreation and other collaborators

The previous section regarding trail design illuminates some of the issues that restoration leaders may have with collaborators like Seattle Parks and Recreation. This next section will further unpack relationships and tensions with collaborators. Some of the following quotes are purposefully left anonymous at the request of the interviewee.

> On the whole, the Parks Department has been very supportive. It's when we don't communicate and don't understand what the other party wants when things go wrong. The Parks Department has underestimated the expertise, knowledge, and supervision that we really need. They underestimate what the volunteers know. Another point of collision is when parks send in crews with weed whackers to whack the edges…sometimes we have landscaped those edges. This creates more area for weeds. We wanted a more woodsy low growing edge. The Green Seattle Partnership and Parks and Recreation are an imperfect collaboration. They [Parks Dept] are still operating under a "this is our land we don't need to listen to anybody else" mentality. Some people in Parks think we're not really maintaining the trails, so they come in and do clearing.
>
> The forte of the Green Seattle Partnership is generating volunteer action and bringing in a number of organizations for these volunteer events. The Partnership allows us to network, and they have a wonderful website showing where projects are. There are interactive GIS maps, and resources for forest stewards and native plant stewards. BUT they're not involved enough in Parks decision making….the communication is an issue. We're partners, we've got to work together. This creates distrust. We forest stewards operate on levels of frustration. The attitude of many forest stewards is 'Parks leave us alone.' Which works up to a certain point. I think Parks has not allocated enough resources, haven't trained people well enough on how to work with volunteers and their work crews need to learn that.

I asked this steward: If you were in charge of all greenspaces in Seattle, the master planner and overseer, what would you do differently? They say they would involve more expertise, a better support structure, and staff who are more willing to communicate.

> You need some project managers who know how to work with people, create respect, and a working rapport. Part of the problem is us forest stewards…we get in here and do our own thing…we distrust the Parks Department. I've worked in a bureaucracy my whole career. You want to develop a working relationship and focus on communication. There are some groups who want these big wide paths. That's fine. We want little narrow ones here. We went through a planning process that developed that. It's not a one size fits all greenspace. Let's respect the community that created their own plans. Some forest stewards left because of the trail thing. It was disrespectful of parks to do that. You want to be enveloped by nature and there is nothing bad about brushing against a branch.
>
> Peggy Gaynor describes differing ideas on maintenance,
>
> Maintenance Departments are into "mow blow and go." There are people who have a little more trouble with the free form aesthetic. You're setting up a successional, it's

> going to keep maturing. When you do an ecologically based design, time is a huge part of that. And you have to understand the succession. You don't do instant landscape and then walk away from it. Parks Departments are into mow blow and go like this lawn [at Madrona Park]. It's predictable. Seeing the opportunity and selling the idea…not everyone is receptive. This landscape is just a result of maintenance practices 'mow blow and go.' We'd go in for permits, and DPD [Department of Planning and Development] didn't know how to permit these projects for daylighting a creek. Every phase of Meadowbrook Creek Daylighting took 2 years. When DPD didn't even know how to permit their own project (Thornton Creek daylighting) then they finally changed their process. 'If you were going to build a gas station, you would have had your permits in 3 months.' someone at DPD told me. Something is definitely wrong with that!

Peggy describes tension with the Parks Department: "They just weren't that supportive because they like the mow blow and go maintenance technique. Their big thing is 'who's going to maintain it?' Their feeling when a community group comes in…they're skeptical because they think they'll end up being responsible, which hasn't been an issue at all here because the Friends of Madrona Park are so great."

Below are more quotes from stewards regarding their relationship with Seattle Parks and Recreation and the Green Seattle Partnership:

"Seattle Parks could do a better job at communicating with stewards"

"I have an excellent relationship with the Green Seattle Partnership and Seattle Parks and Recreation. They do what they're supposed to do."

"The Green Seattle Partnership is a really great deal. They provide resources, trainings, they work hard to get us what we need. If you have a great big natural area that you're trying to create into a forest, it works great. We don't quite fit the model for the Green Seattle Partnership, but they're still involved. We're more into gardening than forest restoration so we have a closer relationship with our district gardener."

David Perasso echoes some of the issues with policy and process within the city government that Peggy Gaynor expressed through her issue with obtaining permitting from DPD.

> We have issues here with weeds popping out of the Oak tree which is detrimental to its health. But policy is preventing us from doing anything about it because they say that it's natural for trees to fall in a forest and become decaying matter. But we have a special situation here because this is one of the last nine trees of this type at Martha Washington Park and it's the biggest one so it has a different kind of value than just letting another tree fall down. There are some great policies that work 99% of the time, but they don't work all the time. What do you do with those exceptions? How do you make those decisions? Overall, Green Seattle Partnership does a really good job. Maybe we just need to set up a way to handle exceptions.

Another steward says,

> We had a lot more freedom under AAA, more cooperation, respect. Green Seattle Partnership is more industrial with a big plan, they have a plan. Ecological zones and targets, more money. Definite top down kind of organization. They get a lot more done because they have big goals and big targets. But I'm not sure that the quality is necessarily better. And stewards don't have as much respect as they did or as they probably should. It's about money, meeting targets, getting acreage done. And that's a good thing providing that the quality remains, which is not always true. I wish things were more site centered and steward centered. I feel like we build up a knowledge of our area and that's not very respected, so that's frustrating.

"The parks dept doesn't want you clearing areas that you can't maintain. That's one thing Green Seattle Partnership has implemented that is good and that they're strict about. They ask how are you going to maintain this, which before wasn't even a question."

"Seattle Parks has been extremely helpful. There's been a lot of respect because I've worked here for a long time. I'm a gardener. They have a basic respect for that."

Conclusions

Suggestions to mediate conflict and for the Green Seattle Partnership to provide better support to restoration leaders

Competing Uses

Given the issue of competing uses, my suggestion is to encourage Forest stewards to accommodate multiple uses at their site or Seattle Parks and Recreation should aim for a distribution of parks that offers a diversity of activities evenly throughout the city. For example, each region of Seattle should contain a dog park, a sports field, hiking trails, mountain bike trails, etc.

Trail Design

Given the predicament where some community groups feel that Parks & Recreation is disrespectful of their plans for trails that do not fit their criteria, I could suggest that Parks and Recreation not use a "one-size-fits-all" trail design method however, it is logical why they have this rule. A wider and more accessible trail system reduces liability for the Parks Department, as all restoration sites involved in this study are Parks Department land. As Tom Palm says, "The Parks Department is totally in charge of everything that happens in the boundaries of Discovery Park." Additionally, as expressed in the "Trail Design" section above, the wide gravel trails require less maintenance than do dirt paths.

The Communication Gap

Given the strong opinions expressed by the forest stewards regarding working with Parks & Recreation and within the Green Seattle Partnership framework, I suggest that Parks and Recreation Maintenance staff attend trainings with the forest stewards to close the communication gap. There are tensions, conflicts, and frustration regarding maintenance, trail design, and ideal use of the space. However, David Perasso finds the struggle useful: "It's not always obvious what to do—one of the most important things to do is to argue about it because if you don't do that, you're never going to come to the best possible solution."

Connectivity

Jay Mirro described a trail we were walking on through Longfellow Creek as a "ribbon of green" that connects one greenspace to another. He went on to say that he put together a grant proposal to put in trails specifically in areas that would better connect Seattle's natural areas, but he did not end up receiving funding. Prioritizing connectivity and wildlife corridors is important when deciding which land to prevent from being developed. This helps both commuters and wildlife, as shown through the Cheasty Greenspace which gives people a pleasant and more efficient way to get to the Othello light rail station.

Suggestions for further Research

More Surveys

I recommend surveying more forest stewards to understand how the Green Seattle Partnership can best support their efforts i.e. through their trainings or providing more resources. I suggest asking more quantifiable questions: i.e. What specifically can the Green Seattle Partnership or Seattle Parks and Recreation do to support your efforts? What is your ideal trail size? Just make my project more quantifiable and include more people.

Redefining Citywide Restoration Targets

I recommend setting restoration targets for species and ecosystem diversity, in addition to existing targets for certain percentages of tree canopy coverage. Most of the current restoration efforts are aimed at conifer forests, but there is value in other types of ecosystems such as oak forests and prairies. David Perasso says,

> Ask not just about tree canopy for a target goal, but what type of relationship do we want people to have with that wetland? Maybe it includes education, harvesting. Everything is measured in tree canopy here which is important, but we could use more ecotypes that need to be developed too such as oak forest, meadow, sedge fen. I'd like to take an area and mow it once a year in September and that's as close as you come to burning. And see what plants would grow. There's a lot of experiments we could do like that where you pick a maintenance regime and see what happens. The GSP book says go into an area with maples, ivy, holly, and blackberry. You clear these, you plant conifers. After a while the conifers get big enough and you don't have to do any maintenance. Is that what you want in your wetland? Probably not. So what do you have to change in that model to make your wetland work. Are you going to go in and weed every year?

I think this more holistic look at restoration targets would be a good addition to long range planning. Tom Palm says, "Green Seattle Partnership has plans for target forest types that they define in different greenspaces. But for the most part, volunteers have their own internal plan about what they want to achieve. I, for example like to plant a lot of ground covers and shrubs. There's not a lot of variety in the park and Green Seattle Partnership mostly wants trees."

Involving Kids

Tom Palm suggested integrating restoration curriculum into Seattle public schools. He says there is a "need for younger people with a spark who want to take care of the area for the next 30 years and make that a priority." Tom goes to say,

> Theres been many attempts about how do we engage kids in restoration and we've had limited success in getting kids to come back. There's no mechanism for them to sustain it from experiencing it in school. They came up with this ecology program a few years ago where the high schools would come up with a plan, the middle schoolers would do invasive removal then elementary school would do the planting. I don't know how widely that's been practiced though. The problem that exists is people go on field trips and they need buses and it's just once a quarter. Let's deliver ecology education to the students where they're at, connect with forest stewards in those areas and do the education in the greenspace that is in the neighborhood. To me that's the way to do it. You can learn the

> foundation and techniques but there needs to be a sustaining voice and org that can train people and motivate them

I think more widely integrating restoration in Seattle Public Schools is a great idea. This will add steam to existing restoration efforts, and give kids a chance to spend more time learning outside which is extremely important.

Policy

As Peggy Gaynor expressed previously, there are clearly some issues in policy when it's easier to obtain permitting for a gas station than it is for daylighting a creek. To repeat the quote:

We'd go in for permits, and DPD [Department of Planning and Development] didn't know how to permit these projects for daylighting a creek. Every phase of Meadowbrook Creek Daylighting took 2 years. When DPD didn't even know how to permit their own project (Thornton Creek daylighting) then they finally changed their process. 'If you were going to build a gas station, you would have had your permits in 3 months.' someone at DPD told me. Something is definitely wrong with that.

Additionally, David Perasso mentioned the issue with it being very challenging to find an exception to some of the rules such as preventing a tree from dying. . There are some great policies that work 99% of the time, but they don't work all the time. What do you do with those exceptions? How do you make those decisions? Overall, Green Seattle Partnership does a really good job. Maybe we just need to set up a way to handle exceptions."

While I am not well-versed enough in current policy regarding these items to make more specific recommendations, I felt it was an important starting point to mention.

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