FAUNTLEROY PARK

VEGETATION MANAGEMENT PLAN

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EXECUTIVE SUMMARY

Fauntleroy Park is a Puget Sound Lowland Remnant Forest of approximately 32.9 acres located in West Seattle. Over 30% of the park is considered steep-slope area, rendering it unbuildable, which ultimately preserved this property. The topography of the park prevents all but passive uses such as walking and observing nature. While some steep areas have been degraded due to human activities, and weeds are abundant in places, the habitat quality of the park remains high. Much of the park retains its native character and appears to be undergoing natural succession.

Fauntleroy Park can be separated into four forest types and wetlands. The majority of the park is classified as hardwood and riparian forest types of approximately 18 acres. Adjacent wetlands consist of approximately 5 acres and conifer and mixed forest types make up approximately 10 acres. The forest is generally healthy and regeneration is occurring at acceptable levels. Some trees along the trail are at or near the end of their lifespan with evidence of damage or disease. These trees should undergo a hazard evaluation by a certified arborist. Trees determined to be a hazard to people or property should be removed.

The greatest diversity of weeds are found in the hardwood and riparian forest type with ivy and blackberry reaching severe levels in places. The conifer and mixed forest types have trace to moderate amounts of ivy and holly, both shade tolerant species.

Volunteer efforts to remove weeds have been underway since 1996, however, some immediate, focused efforts should be implemented to control the spread of some weeds and eliminate weeds from high quality habitats. Habitat areas that are candidates for restoration are found mostly at trail/wetland junctions. Wetland areas are in need of buffer vegetation to aid in natural recovery and prevent access by off-trail users.

Education is a necessary step toward preservation of the character of Fauntleroy Park. The opportunities for education include alerting adjacent property owners of surface water drainage, proper disposal of yard debris, and invasive weed management. All park users should be made aware of the damage created when people and pets wander off trails causing vegetation damage, stream siltation, transport of invasive species, destruction of wildlife habitat, and slope destabilization.

1.0 INTRODUCTION

This Vegetation Management Plan (VMP) has been written for Fauntleroy Park to help preserve the native character of the plant associations and guide focused restoration efforts in those areas that require specific intervention.

Fauntleroy Park is a park with opportunities for low impact recreation such as walking, bird watching and nature observing during daylight hours. The park is not suitable for activities such as mountain biking or other aggressive trail use. Nor does it does provide for active or organized sports. It serves an important function in the neighborhood and to the City as a natural green space to which people can go to reduce the stresses of urban living. As the headwaters of a historically fish-bearing stream, it also serves as an important habitat resource for terrestrial and aquatic wildlife, and is a significant portion of the Fauntleroy Creek watershed.

This plan reflects City-wide policies developed over years through significant public and staff input. It includes the sensibilities outlined in documents developed by neighborhood activists and community organizations and voiced by citizens who live nearby and use the park for relaxation, play, and as an educational tool for children. It also reflects some of the planning and incorporates the goals of various parks entities and other City agencies such as Seattle Public Utilities with regard to stream, wetland, and water quality issues. This VMP was designed using the Sand Point Magnuson Park VMP, created by Sheldon & Associates, Inc., for the Seattle Parks and Recreation Department, as a template. Some appropriate tasks, lists, and strategies have been reproduced in this document.

While one cannot discuss Fauntleroy Park completely without including water and fish-bearing stream issues, the focus of this plan is on the vegetation within the boundaries of the park. After an overview of City-wide parks planning and policies, and a discussion of issues and objectives developed through prior community literature and public meetings, there is an assessment of current conditions based on existing documents as well as ground-truthed plot data collected specifically for this plan. Based on current and anticipated future uses, the VMP addresses Fauntleroy Park as a single Vegetation Zone: a forest remnant. A forest remnant, defined by Agee (1995) is a piece of nature in a matrix of development consisting of natural vegetation that may be pristine or in some state of recovery after disturbance. Within this zone the VMP focuses on five Management Areas identified according to vegetative feature, or on a unifying use. Vegetation management prescriptions are developed and include prioritization, maintenance recommendations, and monitoring protocols.

Section 2 provides an overview, both generally of the Parks Department Planning framework, and specifically of planning within Fauntleroy Park. Section 3 provides a timeline of conditions within the Park, and a snapshot of specific current conditions within the Park. Section 4 defines specifically what the goals and objectives are for each Management Area and defines the areas of focus. Section 5 is the heart of the Management Plan. It defines specific tasks associated with Focus Areas. It should be used in conjunction with Appendix C, which describes in detail how to perform the tasks defined in Section 5. Section 6 provides monitoring protocols to help gauge success of management strategies. Section 7 provides an outline of where work should be done, how to prioritize it and who is most appropriate for performing the tasks.

2.0 GOALS, OBJECTIVES, AND POLICIES OF FAUNTLEROY PARK

These goals and objectives for Fauntleroy Park were developed using existing park's policy and studies, citizen input, and direction from City staff. Several documents that precede this plan contain explicit statements of park management objectives as defined by the community and volunteer groups that are most involved with the park. A public meeting on May 15, 2003 was held to gather additional public input and specific neighborhood and community organization concerns. Staff of Arborwise, LLC attended three meetings of the Fauntleroy Watershed Council and was present during discussions of weed management, water quality, and trail work.

2.1 Goals and Objectives: Fauntleroy Park Vegetation Management Plan

Goals were defined using existing applicable City-wide plans, specific Fauntleroy Park documents, interviews, a range of public comment from user groups and stewardship groups. The following eight goals have been identified to serve as the framework for this VMP.

- Retain and expand a diverse conifer forest habitat
- Create a self-sustaining forest community
- Retain native diversity and expand forest habitat
- Increase wildlife habitat while protecting existing wildlife habitat
- Regain and maintain health of riparian system
- Increase quality of wetland
- Discourage stream sedimentation
- Increase and maintain safety of people who use trails

2.2 Overview: Applicable Department of Parks and Recreation Plans and Policies

The planning framework on which the Fauntleroy Park VMP is based is derived from the documents outlined below.

2.2.1 Seattle Department of Parks and Recreation Complan (2000)

The 1993 Seattle Parks and Recreation Comprehensive Plan (the COMPLAN) was updated in 2000, and is a general guide and framework for decisions and policy directions affecting Seattle Parks. It states that parks planning must:

- Be consistent with the City's overall growth strategy.
- Be focused on conservation of the natural environment.
- Reflect a vision consistent with goals and aspirations of the community.

The mission of the City of Seattle Department of Parks and Recreation (SDPR) is to work with all citizens to be good stewards of the environment, and to provide safe and welcoming opportunities to play, learn, contemplate and build community.

In support of the mission, the fundamental responsibilities of the Department of Parks and Recreation as they apply to Fauntleroy Park are to:

- Listen to citizens of the City and involve them from the beginning, support community initiated efforts to improve the park system.
- Strengthen the City's relationship with the natural environment by demonstrating a strong conservation ethic.
- Strengthen Park's relationship with other agencies and community based organizations through joint planning and work with them to build a network of support and opportunity in neighborhoods.
- Manage the system to promote diversity and access to all and build a stronger sense of community ownership and individual responsibility.

2.2.2 Seattle Department of Parks and Recreation Urban Wildlife and Habitat Management Plan (2000 update)

The revised edition of the Habitat Management Plan is part of the Parks COMPLAN. The purpose is to provide the framework and guidelines for integrating natural and human systems in Seattle's parks and open spaces. The goal is to benefit both the people and the native wildlife that use parks lands. Specific goals and objectives for wildlife resources in Seattle parks as they apply to Fauntleroy Park follow.

- Continue and increase wildlife habitat protection and enhancement efforts through promotion and maintenance of habitat in critical areas, promotion of native species, and enforcement of rules for protecting and enhancing wildlife and habitats.
- Protect and enhance wildlife populations through reintroduction of native species and control of free-roaming domestic and non-native species that threaten wildlife.
- Promote volunteer involvement in wildlife and habitat protection and enhancement through involving and training volunteers and integrating environmental education with volunteer efforts.

2.2.3 Seattle Department of Parks and Recreation Tree Policy

The purpose of the Tree Policy is to maintain, preserve, and enhance the urban forest within parks; To increase the overall tree canopy, tree health and tree longevity within parks and to ensure that parks trees are managed in a manner that is consistent with other departmental and municipal policies. It outlines requirements for the content of Vegetation Management Plans. The policy requires specific detail regarding what work is to be performed, where in the park, and in what time frame. Items that are applicable to the scope of work at Fauntleroy Park are:

- The area considered for vegetation management shall consider site conditions and the adjacent landscape makeup so as to avoid fragmenting the ecological function of the overall landscape.
- Wholesale tree removal should be limited in area. Replacement of trees and other vegetation will be done concurrently with removal work to ensure timely reestablishment of vegetative canopy.
- The plan must not contain any element that is contrary to departmental policy, applicable laws or best management practices.

- The plan must demonstrate that all steps of the planning and review process were followed thoroughly, including procedures required under the department's Public Involvement Policies and Procedures.
- Plans will describe the historical context of the site.
- Plans should improve wildlife habitat.
- Native vegetation, especially conifers, are considered preferable for undeveloped landscapes.
- Areas with significant amounts of invasive exotic vegetation should be aggressively managed to reduce or eliminate these populations.
- The landscape that ultimately results from the Vegetation Management Plan will be designed to minimize long-term maintenance requirements. A VMP will identify all maintenance resources needed to establish and maintain the landscape until it achieves the intended results.

2.3 Fauntleroy Park Specific Plans and Policies

Several park specific planning documents have been produced that provide guidance on goals and objectives of Park users and activists. Many of the documents outline goals arising from a well-established public process.

2.3.1 Draft Fauntleroy Watershed Council – Goals and Objectives

The Fauntleroy Watershed Council was formed in July 2001 when a dozen watershed residents met to establish a venue for Fauntleroy Park volunteers, Fauntleroy Creek volunteers, other interested residents, and agencies to work toward common goals. The mission is to further restoration, stewardship, and responsible public enjoyment of the park and creek. The Council goals are to:

- Stimulate discussion and action
- Provide community input and perspective
- Serve as a focal point for information
- Speak with a common voice on the watershed

2.3.2 Fauntleroy Watershed Action Plan (revised March 2002)

This document is the result of a perceived need for more direction in restoration and enhancement of the stream, as well as a need for more direction in citizen involvement in stream and park issues. It is a merging of two planning efforts: one focused on the stream corridor and funded by Seattle Public Utilities, and the other focusing on the creation of a work plan for the Fauntleroy Park Adopt-a-Park group. The Action Plan provides background information on soils, vegetation and habitat, but focuses primarily on water quality in various reaches of the creek. Recommendations are provided on vegetation management; upland erosion; upland aquatic wildlife; trails and signage; in-stream erosion; wetland and riparian corridors and fish passage; maintenance and security; and stewardship and education. Core values that guided development of the goals and objectives are:

- Emphasizing natural habitat
- Respecting nature's innate ability to heal itself

- Cooperating as full partners in an environment of open, timely communication
- Encouraging broad citizen input and involvement
- Providing training, rehabilitation, and educational opportunities for young people
- Respecting the rights and concerns of residents adjacent to the park and creek
- Sharing experience and expertise to benefit other watersheds and inform public policy

The five goals arising from these values are defined within the Fauntleroy Watershed Action Plan as:

- Preservation, restoration, and enhancement of native vegetation for long-term sustainability of the natural ecosystem
- Preservation and enhancement of native aquatic resources for long-term sustainability
- Promoting safe, habitat-sensitive public enjoyment of the park
- Providing and encouraging opportunities for environmental education
- Establishing and facilitating long-term stewardship of the park and creek

2.3.3 Friends of Fauntleroy Park Proposed Master Plan

The Draft Park Plan was generated from Friends of Fauntleroy Park public meetings and planning sessions, a variety of documents including the University of Washington student's wetland assessment, the Fauntleroy Creek Watershed Plan, Ideas for a S.A.N.E. Park Plan, Friends of Fauntleroy Park Improvement Plan, and recommendations from students and other user groups in the park. It states that Friends of Fauntleroy Park is committed to the following values in assessing and prioritizing activities:

- Preservation and restoration of Fauntleroy Park as a natural area
- Public education and use
- Responsible stewardship

2.3.4 Fauntleroy Park Trail Survey and Recommendation (2002)

The Trail Survey and Recommendation provides guidance and recommendations for trails in Fauntleroy Park. Recommendations related to vegetation are discussed in small portions of this document. Upon the writing of the trail plan there had been no public participation or input. A meeting between the Fauntleroy Watershed Council and Department of Parks and Recreation staff on March 17, 2003 refined the total amount of trail work that is currently considered. Trail work will focus primarily on the trails in the Northwest corner of the park and will consist of remediation of excessively steep trails. Trail crews will make efforts to preserve existing vegetation, particularly large trees. Also discussed at the meeting on March 17, was Seattle Public Utilities' (SPU) water quality activities, and SPU's mission as it does, or does not, relate to trail work in the park. This discussion will be continued as stream corridor planning and stormwater run-off issues in the park are addressed by Sheldon & Associates, Inc., under contract with SPU.

2.4 Public Comment on Vegetation Management Plan

The SDPR coordinated a public meeting on May 15, 2003 to solicit public input into the goals and objectives for Fauntleroy Park. Comments were taken at the meeting. Presented below is a summary of the main topic areas and perspectives presented by the public as well as written comments from Judy Pickens, Chair of the Fauntleroy Watershed Council.

2.4.1 Habitat for Wildlife

- The park is used for birdwatching
- Small mammals such as red fox and raccoons were noted in the past, but now seem infrequent
- Dog leash use needs to be encouraged

  We suggest an educational opportunity by posting signs and distributing information regarding the consequences of free roaming dogs. See section 7.1.1
- Despite the invasives, native species appear to be abundant in the park, offering food and protection to complement the creek as a water source. Until recently, however, the park was eerily quiet. Birds are more evident now but ground dwelling wildlife is not. We are unaware of a feral cat problem. Is this typical of natural parks in Seattle? Or could the vegetation be yet more supportive of wildlife? Residents of the neighborhood are interested in knowing what's here and would respond to improve the habitat for "safe" species.

  Additional native vegetation will support more wildlife. See Appendix D for the list of species currently in Fauntleroy Park and Table 5 – Table 8 for suggested species and planting priorities.

2.4.2 Park Safety

- Historical problem with encampments, parties, and neighborhood robberies
- Hazard trees provide food for other species (e.g. carpenter ants)

  Any felled trees will remain in the park as snags, brush piles, or used in wetland restoration. See Section 5.14 Hazard Tree Treatment.

2.4.3 Restoration

- Possible decline in the Trillium population
- Some nearby neighbors have plants that originated from the park and are available for reintroduction.
- Natural succession is very possible in this park and should be encouraged, even if groups wanting to plant trees must be directed to another more needy park.
- Despite selfless efforts, volunteers and teen crews cannot make headway fast enough against invasives in the park. They are necessarily limited to easily accessed areas and, in the case of teen projects, to large stands of invasives where the chance of error is reduced. If we are to maximize volunteer

contributions, the city must establish a continuing partnership with the community. It must include city support for addressing heavily infested areas and those not safe for volunteers. And it must include city support for all aspects of the task, including recruitment and retention of additional volunteers.

- The plan should recognize the extensive erosion control work to be done this year by SPU in the park, as well as the expected separate contract to address Cambridge Street. Doing so would make the plan current and keep its focus on work not yet addressed.

  See Section 4.2.4 and Table 9

- Many facets of education are critical. Education that gets responsible users into the park will cultivate more responsible use. Education aimed at adjacent property owners will reduce intrusions of ornamental vegetation and harmful behaviors. The community can be an active partner in these activities. What we cannot effectively do is confront property owners when we see evidence of illegal dumping, for instance, or "landscaping" of park property. We need assurance that Parks will provide enforcement in a timely manner.

  Education is addressed as a high priority for implementation in Section 7.1.1.

- Many plants are not represented in the park that could be introduced

  The lack of diversity in the wetlands is clearly a problem. Restoration in other habitats should focus on augmenting the existing species for the best possibility for success. Table 5 – Table 8 and Appendix C.

- Past experience with salvaged plant installation yields slow growth or failure

  Properly planned introduction projects should be coordinated by SDPR staff to determine species selection, timing of introductions, and appropriate locations. Table 5 – Table 8 and Appendix C.

- Where is restoration of native communities planned?

  Initial restoration should take place at trail and wetland junctions for the maximum benefit. The next restoration should occur at the slide area. Table 9

- What species will be used?

  See Table 5 – Table 8 and Appendix D for a list of appropriate species. Obligate wetland species should be increased, buffers added to the wetlands, and upland restoration should focus on commonly occurring species.

- One goal is to eliminate invasive species. How does SDPR see that occurring?

  It will depend on community volunteer effort, available grant funding, and maximizing other work being done in the park by EarthCorps, SPU, the Starflower Foundation, and others . The three-person City Natural Areas Crew may be available for Fauntleroy Park in 2004. This VMP is the planning document that will provide direction and prioritization for park management, and details for granting agencies.

- Can this plan address adjacent property owner issues regarding invasive species on their property?

  Yes. We suggest an educational campaign by distributing information to park neighbors to alert them to the effects their behavior and landscape choices have on the park.

- Fauntleroy Church is the single largest property owner adjacent to the park and, with some attention, it could be a larger ally of the park. The Church is about to adopt an updated mission and set of goals that includes environmental stewardship. The church is in conversation with Parks about a maintenance easement for the property south of Fenton Glen, encompassing the bridge over the Forest Court tributary. It will relieve the church of a problem-maintenance area and bring it up to Parks' standards. The church, too, has problems with illegal disposal of yard debris by adjacent neighbors. The church also dumps leaves and clippings near the upper parking lot and probably exacerbates the problem; neighbors thinking dumping in the park is okay. What could advance a solution is a meeting with Parks and church representatives to devise workable alternatives.

Comments and questions beyond the scope of this Vegetation Management Plan included:

- Would money spent on this VMP be better used to hire staff and remove weeds?
- Who in SDPR helps with grants?
- Why is SDPR going outside for grants?
- Is SDPR too weak in labor services and too heavy in planning?

3.0 INVENTORY AND ASSESSMENT OF HISTORIC AND EXISTING CONDITIONS

The following section is a summary of activities and analysis that has taken place in the Fauntleroy Park area from European settlement to the present.

The forest of Fauntleroy Park is typical of seral-successional communities that developed in Puget Sound lowlands after logging operations on moist sites. Alder as the dominant hardwood species was not common except in recently disturbed sites or specialized habitats such as riparian zones, very much like Fauntleroy Creek. Forests in the Puget Sound lowland region were most likely in the western hemlock/sword fern association (Franklin and Dyrness, 1973). Douglas-fir, western hemlock, and western red cedar are the dominant tree species of the western hemlock zone with shrub species such as red huckleberry and vine maple. Sword fern represented the herbaceous layer in moister sites, though the understory species typically varied along a moisture gradient: Salal is often found in the drier end of the gradient and low Oregon grape is commonly found in the intermediate moisture sites.

'Forested swamps' as described by Franklin and Dyrness, (1973) are a specialized series of communities that can be found in the hemlock/sword fern association, particularly in portions of glacial drift adjacent to the Puget Sound. The primary habitat characteristic in the forested swamp is a high water table, or even standing surface water. The chief tree species in these communities is red alder or western red cedar. Red alder appears to be the climax species in many of these areas, though hemlock and spruce are commonly present. The shrub layer is often dominated by salmonberry. Red huckleberry, evergreen huckleberry, salal, and red elderberry are also commonly present. Fauntleroy Park contains the hydrological conditions and species matrix representing this type of community.

3.1 Historic Conditions

General timeline for events in the Fauntleroy Park area:

1800's White settlement of region
1890 Logging in Puget region
1904 Area developed as a summer colony
1907 Permanent houses and Church built
1922 Lincoln Park established
1925 Ferry landing installed at mouth of Fauntleroy Creek
1930's Logging for home sites
1940's – 1950's Growth of area following WWII
1958 Fauntleroy ferry landing expanded
1960's Sewers installed for potential building sites, trails created as a result of casual movement through the area
1971 Property purchased by Seattle Department of Parks and Recreation
1989 Friends of Fauntleroy Creek established
1996 Friends of Fauntleroy Park established
2001 Fauntleroy Creek Watershed Council established

3.2 Current Conditions Studies

Prior to this Vegetation Management Plan, Fauntleroy Park had not been formally studied for wildlife habitat and vegetation. However, SDPR, the Seattle Urban Nature Project, the Friends of Fauntleroy Park, and University of Washington students have contributed to habitat status and planning for Fauntleroy Park. A summary of these studies follow.

3.2.1 Seattle Urban Nature Project

The Seattle Urban Nature Project (SUNPro), an independent non-profit organization, conducted vegetation mapping of Seattle's parks, greenbelts, and open space including Fauntleroy Park in 2000. The maps were created using aerial photographs and on-the-ground observation. The SUNPro map shows a graphical representation of the four major habitats including conifer, deciduous, mixed, and riparian forest types. Identification of wetlands did not include official delineation. SUNPro mapping also identified the percent cover of invasive species. The maps indicate coverage for cherry laurel, *Clematis* sp., Himalayan blackberry, holly, and ivy. The SUNPro maps are included as Appendix A.

3.2.2 Urban Wildlife and Habitat Management Plan (UWHMP) 2000 Update

Prepared by the SDPR, the purpose of the UWHMP is to provide the framework and guidelines for integrating natural and human systems in Seattle's parks and open spaces. The original wildlife inventory took place in 1994 with an update in 2000. The inventory included terrestrial vertebrates, salt and fresh water fish, and aquatic and terrestrial invertebrates. The inventory of resources was derived from existing information, aerial photo interpretation, and limited field studies. This inventory revealed the need to collect baseline information to develop site specific plans, monitor for long-term changes, and develop protection measures for existing habitats.

Particular habitat types support typical wildlife species of the region. The forest types found in Fauntleroy Park are listed here with the species that are known to occur in those habitats per the UWHMP. Species with asterisks were observed during data collection for this VMP.

Conifer Forests. Conifer forests support year-round breeding and feeding habitat for bird species such as red-tailed hawk*, American crow*, varied thrush*, black-capped chickadee*, Steller's jay*, northern flicker*, winter wren*, and Swainson's thrush. Mammals using coniferous forests include the deer mouse, mountain beaver, racoon, bats, and Townsend's chipmunk. Expected amphibian species include northwest salamander and Pacific tree frog.

Deciduous Forest. Deciduous forests lack a year-round canopy and thus fewer wildlife species are found there. Typical species of this habitat include the American robin*, northern flicker*, pileated woodpecker*, downy woodpecker, deer mouse, and racoon.

Hardwood Coniferous Mixed Forest. The mixed forest type offers similar habitat to the coniferous forest type and is suspected to support similar wildlife species.

Riparian Forest. Riparian forests are generally more productive in plant and animal biomass than surrounding vegetative communities. This habitat provides a water source and movement corridors. Riparian areas are used by birds, mammals, and amphibians to move from habitat patch to habitat patch. Riparian and riverine habitat issues for Fauntleroy Park have been noted within the UWHMP. Specifically, Fauntleroy Creek was noted for having high nitrogen loads and barriers to upstream fish passage.

3.2.3 Wetlands of Fauntleroy Creek Baseline Assessment 1996

This report was developed by a team of students from the University of Washington as a course requirement. The report focused on the wet areas on the north side of the park near the boardwalk and viewing platform. Time and resource constraints limited this assessment to the most basic starting point for understanding the functions and conditions of the wetlands in the Park. The assessment looked at the site history and park ecology, and the hydrology, soils and vegetation at three plots.

The primary water source for Fauntleroy Creek is presumed to be groundwater seeping from east of the park. Two soil types were observed, Bellingham series and Indianola series soils. Indianola soils are well drained and typically not wetland soils. Vegetation was not remarkable in that plant associations were commonly found in alder-dominated swamps. However it was noted that there was significant bare ground in some wetland areas indicating a possible problem of foot traffic through wetlands. The assessment determined that two of the three plots were wetlands based on hydric soils and vegetation conposition.

3.2.4 An Assessment of the Vegetation of Fauntleroy Park (winter 2001-2002)

This assessment was compiled to provide volunteer groups a documented record of the current status of the park so they can monitor changes as they occur. It provides an inventory of the items listed below. Maps are included for each.

- Native plants found in the park
- General canopy coverage
- Severity estimate of invasive plant species
- Areas that have been weeded by volunteer groups
- Areas of special interest with regard to vegetation damage

This report proved valuable for locations and abundance of both park-rare natives and invasive species. It also showed a level of skill and sense of commitment from a dedicated group of volunteers.

3.2.5 Volunteer Activities to Date

Judy Pickens, neighborhood activist and Chair of the Fauntleroy Watershed Council provided the following information regarding vegetation activities in which volunteers were involved.

- Autumn 1991, tree planting with TREEmendous Seattle, trees installed throughout the park.
- 1993 Summer Youth Employment revegetation east of Fenton Glen. Crews installed shrubs on each side of the creek with marginal success.
- 1998 EarthCorps repair of the former bike-jump area and the slide area east of the big bridge (initially attempted by the Friends of Fauntleroy Park, however, their work was destroyed by vandals and the carelessness of park users).
- 1999 Kapka School installed trees and shrubs inside the Barton Street entrance. The Kapka School is returning in the spring and autumn of 2003 to plant and maintain more vegetation.
- 2000 EarthCorps revegetation of a slope damaged on the north end of the park at the church boundary.
- Spring 2001 Seattle Parks sponsored 100 teenagers for a day-long planting project throughout the park.

The Friends of Fauntleroy Park (FFP), primarily a group of neighbors involved in weed removal and vegetation installation in the park, are coordinated by Steve Bomkamp and Karen Farnsworth. The group was formed in 1996 under the Adopt-a-Park program, and had a few work parties. For two years, only Mr. Bomkamp continued to work in the park. In 1998 the group reformed and has continued to today. Work parties are scheduled for the second Saturday and Sunday of each month from 1:00 PM to 3:00 PM. The first area completed by the FFP was the drainage to the east of Forest Court. They are currently working on the area south of the Cambridge Street entrance. Several other volunteers are working independently in the southern portions of the park. Hours spent weeding by volunteers are estimated at over 500 for the year 2002.

3.3 Vegetation Survey

In accordance with the goals and guidelines outlined in the Scope of Work provided by SDPR, Arborwise, LLC conducted a vegetation survey of Fauntleroy Park in January and February 2003. Wetland evaluation in Fauntleroy Park was performed on a separate contract by Sheldon & Associates, Inc. in March, 2003. The wetland evaluation follows as Section 3.3.3.

3.3.1 Methods for Forest Analysis

Plot locations were stratified based on the initial SUNPro indication of four forest types. Fifteen 1/10-acre circular plots were randomly selected representing a five percent sample of the forest type vegetation. In addition, three transects were surveyed along the upland to lowland gradient. The location of the survey plots and transects are shown in Map 1.

Each plot was described by soil characteristic, slope, canopy closure, and aspect. Snags per plot were counted. Coarse woody debris was measured by length and diameter and classified from one to five based on decay level.

Plants per plot were recorded as tree (above 15 ft), shrub (2-15 ft), and groundcover (below 2 ft) species. Age, diameter at breast height, height, and health were recorded for each tree in the plot. Shrubs and groundcovers were identified by species and estimated by percent cover. Tree species measured in the shrub or groundcover class were calculated as regenerating forest tree species.

Transects between 150 and 450 feet long were established in three locations. Ten-foot radius plots were placed every 50 feet and data were collected the same as the forest plots. Example data sheets and protocol are attached in Appendix B.

During data collection it was noted that existing maps contained inaccurate stream locations. Using data from recent LIDAR technology, true stream locations were located on Map 2. True stream locations appear on all maps except Map 1.

3.3.2 Results

On the basis of the SUNPro representation of Fauntleroy Park, and verification by the vegetation characterization data collected, Fauntleroy Park has been divided into four forest types for data analysis purposes. A map with the locations of forest types is shown as Map 3.

The four major invasive weed species (ivy, blackberry, holly, and cherry laurel) were classified as light, medium, and severe infestation levels. Light coverage is defined as up to five percent cover. Moderate is defined as 5 to 15% cover, and severe is over 15% cover.

Regenerating tree species were those measured below 15 feet in height. Regenerating trees include poles, saplings, and seedlings.

Coarse woody debris was measured to determine the historical regeneration and ecological health of the forest. Snags are considered to be any standing deadwood over five feet tall. Average snags per acre were calculated. A summary description of the forest types follows.

Conifer Forest Type

Table 1. Plot Summaries for Conifer Forest Type

Conifer Forest Type	
Plots	4, 7, 8, 10
Total Acres	6
Overall Tree Health	68% = Good 23% = Fair 10% = Poor
Average Slope	30%
Soils	Typically thick duff over sandy loam
Canopy Closure (avg)	80%
Dominant Trees	western red cedar, Douglas-fir
Avg. % Cover Dominant Shrubs	western hazel 15%, evergreen huckleberry 12%, salmonberry 9% (Figure 1)
Avg. % Cover Significant Groundcover	sword fern 28%, Oregon grape 17%, salal 10% (Figure 2)
Significant Invasive Coverage	ivy = trace to moderate blackberry = absent to trace holly = trace to light cherry laurel = trace to light
Regenerating Tree Species	western red cedar, western hemlock, bigleaf maple (Figure 3)
Coarse Woody Debris (avg/acre)	
Solid	420 $feet^3$/acre
Decayed	1,430 $feet^3$/acre
Snags (avg/acre)	30/acre

Three areas of the park are defined as conifer forest: a large central portion, a narrow strip along the southeastern edge, and a small patch near the Forest Court entrance to the park (Map 3). All conifer forest type areas are upland and represent a mesic (medium moisture levels) forest type.

Soils are sandy loam and drainage is generally good. Slopes are between 11% and 53%. One part of the Conifer Forest Type is relatively flat with slopes of 11% or less. A large portion of the conifer forest has a completely closed canopy, preventing any but the most shade and drought tolerant species from becoming established. The edges of the conifer forest tend to have a diverse and healthy native shrub understory. Specific sites within the conifer forest are more affected by human use and compaction than others, but overall it is generally healthy and diverse. Erosion does not appear to be a problem.

Canopy

Douglas-fir and western red cedar are the dominant overstory trees in the conifer forest. Several planted coast redwoods, scattered western yew and western dogwood are found in the lower canopy. Spruce (*Picea sitchensis*) and grand fir (*Abies grandis*) have been planted during restoration efforts. On the edges of the conifer forest, are alder and occasionally big leaf maple where the conifer forest type

transitions to a mixed hardwood/conifer or a hardwood forest type. The conifer forest has enough snags to support wildlife. According to the Seattle Department of Parks and Recreation Urban Wildlife and Habitat Management Plan, thirty snags per acre are considered ideal for wildlife habitat.

Understory

The understory, when present, is predominately sword fern, low Oregon grape, and salal. Shrubs of evergreen huckleberry and western hazel are scattered throughout and regeneration of hemlocks occurs in patches in the understory. One large area is entirely bereft of understory plants, a common occurrence in natural forest areas where healthy conifers have grown to form a closed canopy.

Invasive Plants

Invasives are present to varying extents in the conifer forest type. They have had as little success becoming established in the native understory areas of the closed canopy (Map 5). However, in the areas adjacent to the park boundary, the invasive coverage tends to increase. The most common weed species found are English ivy, cherry laurel, and holly. Average percent cover of weeds per forest type is found in Figure 4.

Hardwood Forest Type

Table 2. Plot Summaries for Harwood Forest Type

Hardwood Forest Type	
Plots	2, 6, 12, 13, 15
Total Acres	14
Overall Tree Health	46% = Good, 44% = Fair, 12% = Poor
Average Slope	26%
Soils	Sandy loam to wet silt
Canopy Closure (avg)	83%
Dominant Trees	red alder, bigleaf maple
Avg % Cover Dominant Shrubs	salmonberry 42%, western hazel 21%, red elderberry 7% (Figure 1)
Avg % Cover Significant Groundcover	sword fern 38%, Oregon grape 11%, salal 10% (Figure 2)
Significant Invasive Presence	ivy = trace to severe blackberry = trace to light holly = light to moderate cherry laurel = trace to moderate
Regenerating Tree Species	red alder, bigleaf maple, western hemlock (Figure 3)
Coarse Woody Debris (avg/acre)	
Solid	256 $feet^3$/acre
Decayed	962 $feet^3$/acre
Snags (avg/acre)	14/acre

The majority of Fauntleroy Park is defined as either hardwood or mixed hardwood/conifer forest types (Map 3). These forest types are contiguous, located primarily in the ravines and slopes that surround the upland conifer ridges.

Soils in the hardwood and mixed hardwood/conifer forest range from well-drained sandy loam to poorly-drained silty clay loam. Finer soils are associated with areas of streams or seeps at the bases of steep slopes. Steep slopes, defined as slopes greater than 40%, represent approximately 30% of the park. Twelve known areas of steep slopes are in the hardwood forest (Map 6). The slopes vary from 10% to nearly 90%.

Canopy

Canopy closure ranges from 40% to 100% in the hardwood forest. The tree composition is predominately mature and declining red alder. However, one section of the hardwood forest type on the south side of the park is in the upland areas more commonly associated with the conifer forest type. As a consequence of the drier well-drained condition, this upland hardwood forest type contains a significant number of Pacific madronas.

Understory

Native understory shrubs include Indian plum, hazelnut, red elderberry, and an occasional bitter cherry. Smaller shrubs and ground covers often include salmonberry, low Oregon grape, and sword fern. Western trillium (*Trillium ovatum*) is found in patches along the trail in sections of the hardwood forest.

Invasives

The higher light conditions that provide for a diverse understory in this forest type also provide for an increase in invasive species numbers and diversity. Invasive species severity ranges from trace to severe in a patchy manner (Map 5). Invasive shrubs include cherry laurel and Spanish laurel (*Prunus laurocerasus* and *P. lusitanica*), daphne laurel (*Daphne laureola*), English holly (*Ilex aquifloium*), English ivy (*Hedera helix*), traveler's joy (*Clematis vitalba*), and Himalayan blackberry (*Rubus discolor*). The most severe invasive weed problems are adjacent to the boundaries of the park. Average percent cover of weeds per forest type is found in Figure 4.

Mixed Hardwood/Conifer Forest Type

Table 3. Plot Summaries for Mixed Hardwood/Conifer Forest Type.

Mixed Hardwood Conifer Forest Type	
Plots	9, 11, 14
Total Acres	5
Overall Tree Health	39% = Good, 36% = Fair, 25% = Poor
Average Slope	44%
Soils	Variable thick duff over loam to clay
Canopy closure (avg)	70%
Dominant Trees	red alder, western red cedar

Avg % Cover Dominant Shrubs	red elderberry 18%, vine maple 12%, evergreen huckleberry 7% (Figure 1)
Avg % Cover Significant Groundcover	Oregon grape 11%, lady fern 9%, salal 6% (Figure 2)
Significant Invasive Presence	ivy = trace to moderate blackberry = absent to trace holly = light to severe cherry laurel = light to severe
Regenerating Tree Species	western hemlock, western red cedar, bigleaf maple (Figure 3)
Coarse Woody Debris (avg/acre)	
Solid	160 $feet^3$/acre
Decayed	1,690 $feet^3$/acre
Snags (avg/acre)	16/acre

The mixed hardwood/conifer forest type has the highest percentage of trees in poor health (25%). Most of these trees are red alder at or near the end of their life-span. This forest type also has the steepest average slope, which also may be contributing to the health of the trees. Snag percentage is expected to increase given the declining trees.

Water and slope issues create less stable slopes in the mixed hardwood/conifer forest than are found in the conifer forest type. Typical of Northwest forest conditions, the base of many of the slopes within the park are saturated due to the rapid movement of ground water downhill abruptly slowing where the slope levels out. Additionally, several areas in the mixed forest have seeps daylighting midslope. These wet areas eventually seep to streams. Two issues arise from these conditions. Potentially large-scale instability may be created where impermeable clay layers underlie upper sand layers. During times of high saturation, the upper sand layer may ride a slippery clay layer to slump in a manner similar to the Puget Sound Bluff Slides following the holiday 1996/97 storms (Gerstel et. al. 1997). Also, a significant portion of the park's steep slope bases may be classified as wetlands due to these conditions (Map 3).

Canopy

Bigleaf maple is more common in the transitional mixed forest type than the hardwood forest type. Hemlock regeneration is fed by seeds from the adjoining conifer forest. Western red cedar appears to be regenerating primarily from the layering of mature trees creating tight patches of conifers surrounded by hardwood tree types. Douglas-fir in the mixed forest type is limited to those trees that became established immediately after logging or other disturbance occurred in the 1930's. Conifers represent up to 35% of the mixed hardwood/conifer overstory.

Understory

Vine maple (*Acer circinatum*)occurs in patches in this forest type. Red elderberry (*Sambucus racemosa*) is associated with the alders, while evergreen huckleberry (*Vaccinium ovatum*) is associated with the conifers. Herbs include stinging nettle (*Urtica dioica*), youth-on-age (*Tolmiea menziesii*), fringe cup (*Tellima grandiflora*),

and foam flower (*Tiarella trifoliata)*. Western trillium (*Trillium ovatum*) is found in patches along the trails.

Invasives
The invasive composition is similar to what is found in the hardwood forest type. Average percent cover of weeds per forest type is found in Figure 4.

Riparian Forest Type

Table 4. Plot Summaries for Riparian Forest Type.

Riparian Forest Type	
Plots	1, 3, 5
Total Acres	3
Overall Tree Health	49% = Good, 34 % = Fair, 17% = Poor
Average Slope	19%
Soils	Clay loam to silty clay
Canopy Closure (avg)	63%
Dominant Trees	red alder, western hemlock
Avg % Cover Dominant Shrubs	salmonberry 47%, western hazel 14%, red elderberry 9% (Figure 1)
Avg % Cover Significant Groundcover	sword fern 11%, horsetail 4% (Figure 2)
Significant Invasive Presence	ivy = trace to moderate blackberry = absent to severe holly = trace to moderate cherry laurel = light to severe
Regenerating Tree Species	western hemlock, western red cedar, bigleaf maple (Figure 3)
Coarse Woody Debris (avg/acre)	
Solid	1,410 $feet^3$/acre
Decayed	1,840 $feet^3$/acre
Snags (avg/acre)	36/acre

The riparian forest reflects the surrounding forest types with regard to canopy cover. Riparian forests are those that are specifically integrated, influence, and are influenced by the stream and associated wetland areas (Map 4). The species composition is generally similar to the surrounding forest, with the exception of species adapted to wetland areas. Though much of this forest type may be associated with the stream, the stream is not necessarily associated exclusively with the riparian forest for its entire length within the park. In areas where the banks are steep or the ravine rises rapidly from the creek bed, the creek is moving through a mixed forest area. Occasionally the transition between these areas is not rapid or obvious. Soils in the riparian forest tend to be fine, and are occasionally saturated.

Canopy
Canopy cover ranges from 40% to 80%. The overstory is predominately mature and declining alder, but like the mixed forest to which some of the riparian forest is

adjacent, there are bigleaf maples, hemlocks and a few western red cedars mixed in. Few Douglas fir can be found in the riparian forest type. Many of the trees in this area are in decline or are snags.

Understory

The primary difference between the riparian and the mixed forest is the understory shrubs and plants. We observed the transition from hardwood/mixed forest to riparian forests in transects from upland hardwood forests to the riparian areas. Some areas of the riparian forest understory are exclusively salmonberry. From the flat, low elevation areas of the park to upslope a few vertical feet, the understory plant composition rapidly changes, reflecting coarser, better-drained soil conditions. Besides salmonberry, understory species in wetter areas include skunk cabbage, stinging nettle, and water parsley. Deer fern and lady fern are more likely to be found in the riparian forest type than in any other forest type in the park. On the better-drained slopes, vine maple, hazel, and red elderberry rapidly gain in numbers.

Invasives

Invasives in the riparian forest type are patchy and generally reflect the higher light conditions due to the decreased canopy cover. Blackberry reaches severe levels in open areas. Japanese knotweed populations are low within the park, but in the creek ravine area in the Fletcher Street right-of-way in the northeast corner of the park, it is a significant problem. Cherry laurel and holly are also commonly found in the riparian forest. English ivy is less significant due to recent weeding activity. Average percent cover of weeds per forest type is found in Figure 4.

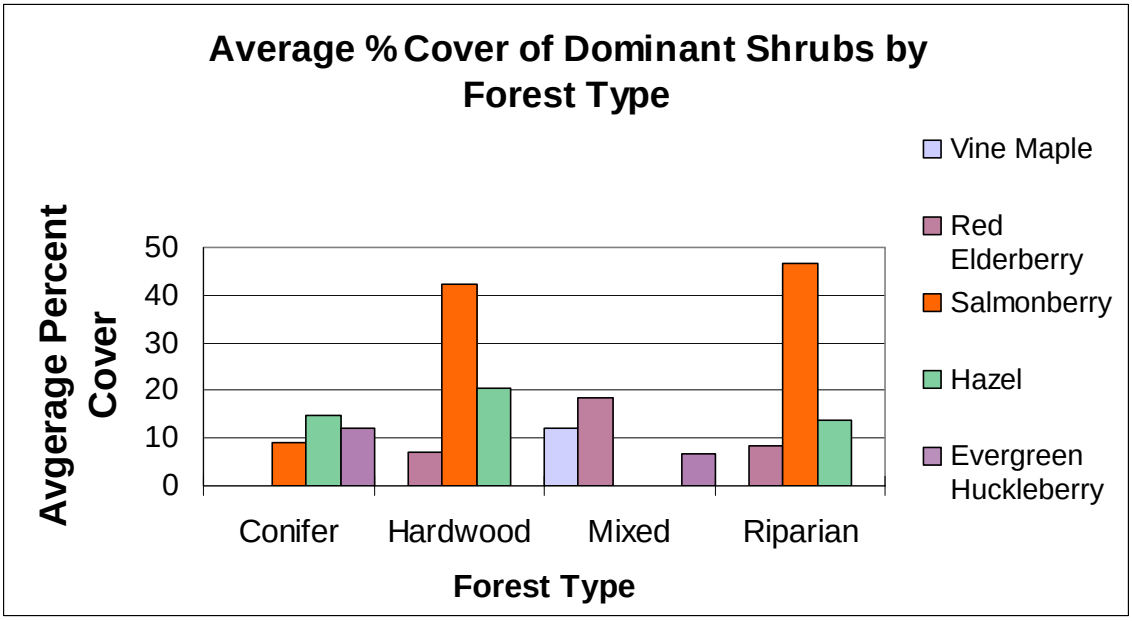

Figure 1. Dominant Shrubs per forest type. Percent coverage of dominant shrubs in the park is highest for salmonberry. Coverage increases dramatically in areas of higher moisture in the hardwood and riparian forest types, the forest types that represent the largest areas of the park. It is present to a lesser extent in the conifer forest type, and is insignificant in the mixed forest type. Red elderberry and hazel are the next most dominant species and are present consistently through most forest types. Evergreen huckleberry appears in forest types considered more mature, and in conjunction with conifer tree species.

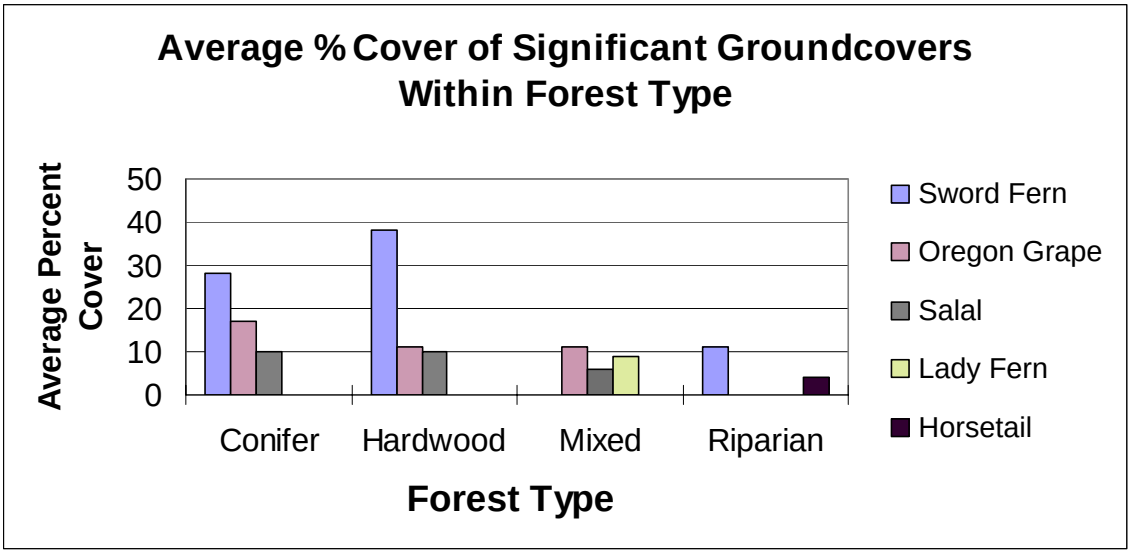

Figure 2. Significant Groundcover per forest type. Based on data collected within the plots, sword fern appears in largest numbers relative to other ground covers in both moist and dry forest types while salal and Oregon grape are found in drier habitats exclusively.

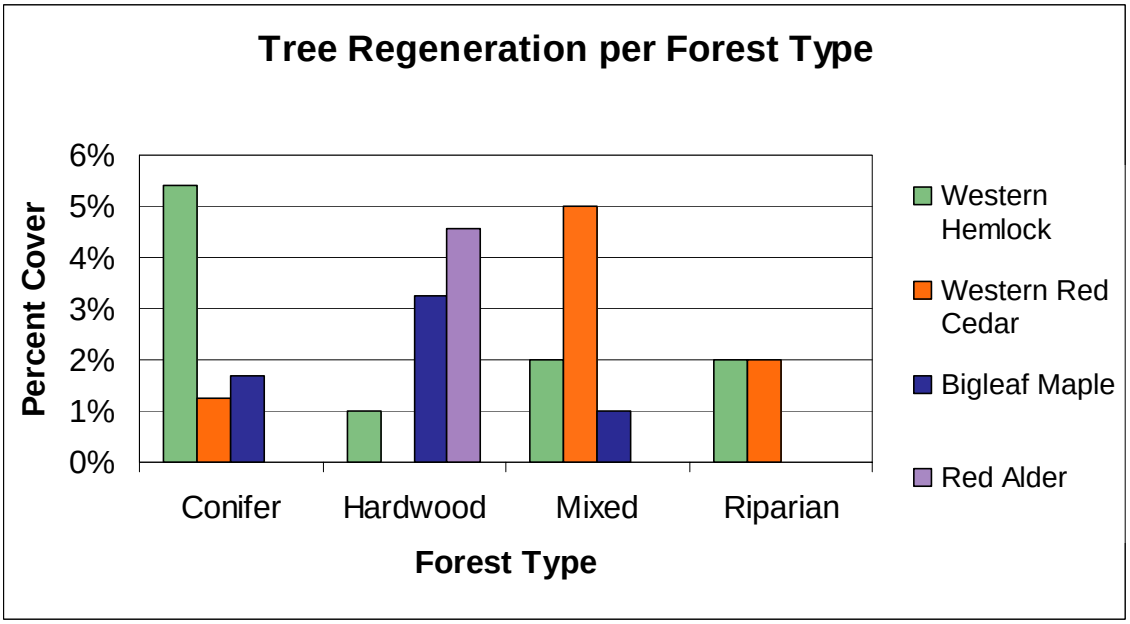

Figure 3. Tree species regeneration per forest type. Western hemlock is the most successful regenerating tree species in all but the hardwood forest type. It is capable of regenerating in lower light conditions of conifer and mixed forest types, and is tolerant of moister soils in the riparian forest type. Note that no cottonwood regeneration was found in the riparian forest type.

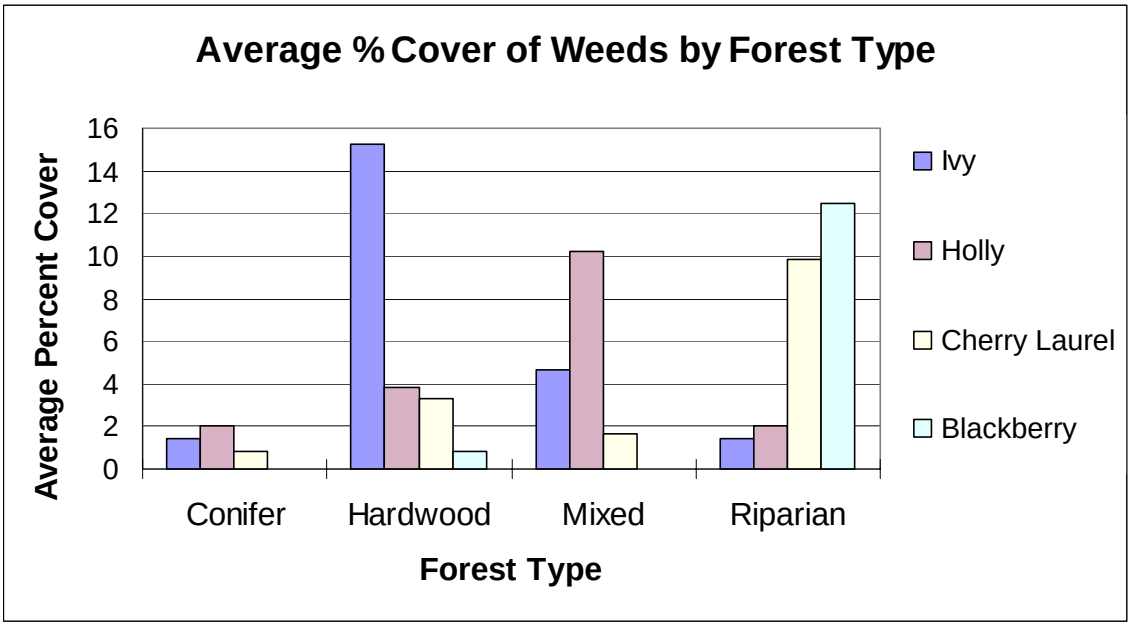

Figure 4. Comparison of Invasive Species per Forest Type. The dry, low light conditions of the conifer forest keep most weeds to a minimum. The diversity of weeds is greater in the hardwood and riparian forest types due to the moist conditions and open canopies. Ivy, while found in all forest types, was noted to have large infestations in several areas of the hardwood forest. This figure reflects data collected within plots. Significant ivy infestation was noted in the conifer forest type, but outside of established plots. Blackberry is the invasive weed with the most success establishing in the riparian forest area. It proliferates in higher light conditions in the sparse canopy of the riparian forest type.

3.3.3 Wetland Evaluation

No formal delineation was performed for the wetland boundaries. The stream corridors and depressions were observed and soil moisture and vegetation were analyzed using the US Army Corps of Engineers Manual, 1987. Test pits were dug to determine hydric soils and obligate wetland vegetation was recorded. Four wetlands were observed in the park (Map 3)[1].

The wetlands are primarily associated with Fauntleroy Creek and its tributaries. Several of them also receive water from hillside seeps. All the wetlands drain to the stream system. The wetlands in the park are either riverine (receiving regular flooding from creeks), slope (on inclines that are generally fed by groundwater seeps), or a combination of riverine and slope wetlands.

Wetland A is located at the southwest corner of the western lobe of the park where it lies to the east of California Avenue SW. Wetland A is mostly slope wetland fed by hillside seeps. It is possible that this seep receives some flow from street or house drains, but this could not be confirmed due to the density of blackberry. The western edge of the wetland is defined by a tributary stream of Fauntleroy Creek. Wetland A is roughly 4,000 square feet in size. The soils are saturated at the surface throughout the wetland and consist of sandy loam. Dominant species in the wetland include salmonberry (*Rubus spectabilis*), Himalayan blackberry (*Rubus discolor*), lady fern (*Athyrium filix-femina*), and skunk cabbage (*Lysichiton americanum*). The wetland is scrub-shrub and is surrounded by a forest canopy dominated by red alder (*Alnus rubra*). The wetland extends outside of the park boundary. Within the wetland buffer is a park trail and a house.

Wetland B includes a complex of five small stream-side wetlands along Fauntleroy Creek in the area where the stream exits the northwest corner of the park. These are riverine wetlands that formed on the sediment that is deposited where the stream banks have sloughed or slumped. The wetland complex extends outside of the park to the point where the stream enters a large grate and goes subsurface behind the church on California Ave SW. This series of very small wetlands are similar in that they receive water from and drain directly to Fauntleroy Creek. They have gravelly sandy soils that remain saturated or flooded for most of the year. Dominant plants include salmonberry, skunk cabbage and water parsley (*Oenanthe sarmentosa*). Very little invasive coverage was observed in this wetland complex within the park, although the area that extends outside the park boundary to the west is dominated by a non-native impatiens. Within the park, the total size of these small pockets of wetland is likely less than 1,000 square feet.

Wetland C is located near the headwaters of a tributary stream that parallels the west edge of the central portion of the park. It is a combination of riverine and slope

[1] The wetlands represented on this map were not delineated. Due to the initial use of maps based on incorrect topographic information and subsequent transfer of the wetland information to maps with accurate stream locations, the mapped wetland locations can only be considered an estimate of actual boundaries.

wetland, receiving water from extensive hillside seeps and from seasonal flooding of the creek. The wetland drains to the creek. The soils in the wetland are highly decomposed organic mucks that are a deep black in color. The surface of the soil was saturated throughout the wetland and small areas of ponding were also noted. Wetland C is a forested/scrub-shrub wetland that is dominated by red alder, salmonberry, red elderberry (*Sambucus racemosa*), lady fern, water parsley, and patches of skunk cabbage. The wetland is in good condition and has little coverage of invasive species. Wetland C appears to be about one-half acre in size, although a small portion of the wetland lies outside of the park boundary.

Wetland D is the largest wetland in the park. It lies central in the northern portion of the park in the lower elevations near Fauntleroy Creek. Wetland D is a combination of riverine and slope wetland. It receives most of its water from numerous hillside seeps, but also from Fauntleroy Creek and three of its tributary streams. The primary outlet of the wetland is Fauntleroy Creek. The soils in the wetland vary. Near the stream channels, one finds gray sand and some silt. On the slopes, the soils tend to be black organic muck. The main vegetation class in the wetland is scrub-shrub, although some areas around the edges could be considered forested. The wetland is surrounded by a forest canopy in the buffer. Dominant plant species in the wetland include salmonberry, skunk cabbage, and lady fern. Patches of water parsley, stinging nettle (*Urtica dioica*), and small-fruited bulrush (*Scirpus microcarpus*) are common. The invasive species Himalayan blackberry has significant cover only in the northeast portions of the wetland where it flanks Fauntleroy Creek. English ivy (*Hedera helix*) is also common along some of the higher edges of the wetland on the slopes, particularly in the northeast portion of the wetland. Wetland D lies entirely within Fauntleroy Park and may total just over 5 acres in size.

4.0 MANAGEMENT AREA GOALS, OBJECTIVES, AND FOCUS AREAS

While Fauntleroy Park is placed in the context of a single Vegetation Zone within the City of Seattle, a forest remnant, the park itself is broken into distinct Management Areas. Five Management Areas in Fauntleroy Park are based on the four forest types discussed in prior chapters, the wetland area defined by Sheldon & Associates, Inc., and the area of trails in the park. The Hardwood and Mixed hardwood-conifer forest types have been combined into one Management Area, the Hardwood and Mixed Forest Type Management Area (H/MMA), because of similar species composition and management requirements. The remaining four Management Areas are based on original forest type or ecosystem type designations: The Riparian Forest Type Management Area (RMA), the Conifer Forest Type Management Area (CMA), the Wetland Management Area (WMA) and the Trail Management Area (TMA) (Map 4).

4.1 Goals and Objectives by Management Area

The goals identified in Section 2 and their objectives have been arranged by Management Area. Goals were defined using existing applicable City-wide plans, input from staff, specific Fauntleroy Park documents, interviews, and public comment from users and stewardship groups. The objectives are the result of data collection and field observation and are designed to help achieve the goals.

4.1.1 Conifer Forest Type Management Area

Goal: Retain and expand a diverse conifer forest habitat
Objectives:

- Reduce and eliminate invasive plants
- Encourage regeneration of desirable species
- Establish understory

Goal: Create a self-sustaining forest community
Objectives:

- Preserve condition of existing vegetation
- Increase diversity and abundance of understory species

4.1.2 Hardwood and Mixed Forest Type Management Area

Goal: Retain native diversity
Objectives:

- Reduce and eliminate invasive plants
- Encourage regeneration of coniferous or other appropriate tree species
- Encourage growth of diverse understory species

Goal: Increase wildlife habitat while protecting existing wildlife habitat
Objectives:

- Reduce disruptions to habitat
- Discourage unnecessary human access to forest interior

4.1.3 Riparian Forest Type Management Area

Goal: Regain and maintain health of riparian system
Objectives:

- Discourage human access to stream and buffer areas
- Encourage canopy closure of appropriate tree and shrub species near stream
- Increase conifer coverage near stream where appropriate

Goal: Eliminate stream sedimentation
Objectives:

- Maintain slope stability
- Retain and increase CWD recruitment

4.1.4 Wetland Management Area

Goal: Increase quality of wetland
Objectives:

- Increase diversity of vegetation
- Increase barrier vegetation at wetland/trail interface

Goal: Eliminate stream sedimentation
Objectives:

- Allow for recruitment of CWD, including addition by design, without waiting for natural occurrence
- Reduce access to steam and wetlands at bridges

4.1.5 Trail Management Area

Goal: Increase and maintain safety of people who use trails
Objectives:

- Mitigate tree hazards
- Close and revegetate excessively-steep trails
- Discourage inappropriate off-trail use

4.2 Identification of Focus Areas Within Management Areas

Focus Areas are specific locations that have been identified as requiring maintenance to achieve the goals that have been defined within this VMP. Focus Areas are illustrated in Map 7. These areas are defined within the context of the overall Management Area because plant selection and maintenance activities will vary between Management Areas.

4.2.1 Conifer Forest Management Area

The Conifer Forest Management Area consists of four discrete areas with an overstory of predominately coniferous species (Map 4). The Conifer Management Area (CMA) is the area of the park with the fewest vegetation issues.

Focus Areas Within the CMA

Eastern strip of conifer forest

A large portion of the CMA in the southeast corner of the park (Map 7) is heavily infested with English ivy. Ivy blankets the ground, and there are many trees that are covered with ivy. However, some ivy has recently been pulled. This area, which is divided on the north by the trail leading from the Cambridge Street entrance and continues to the south along the eastern border of the park, has been a recent area of focus for the Friends of Fauntleroy Park volunteer group. They have begun cutting ivy from the trees and grubbing it from the forest floor. At the southern edge of this area of CMA on the park boundary is a large patch of Himalayan blackberry.

Northwest section of conifer forest

This portion of the park has recently been the focus of weeding projects by the Friends of Fauntleroy Park. Continued monitoring of this area will be necessary to prevent reestablishment of the invasive species. (See Map 7).

4.2.2 Hardwood/Mixed Forest Type Management Area

The Hardwood/Mixed Forest Type Management Area (H/MMA) is the largest portion of the park. The area is contiguous, and consists of the combined area of the Hardwood Forest Type and Mixed Hardwood/ Conifer Forest Type (Map 4). Combined, these forest types represent approximately two-thirds of the entire park. Since much of the park is represented by the H/MMA, there is a wider range of diversity in slope and hydrologic conditions. The larger area, and the diversity of the environments, results in multiple vegetation issues and focus areas.

Focus Areas Within the H/MMA

Wind-throw area on hillside in north central region

An interesting feature of the (H/MMA) is the hillside where plot 13 is located (Map 7). The canopy on this hillside consists almost entirely of very large over-mature red alder. The area shows signs of wind-throw from some event 70 to 80 years ago. Hummocks and pits characteristic of wind-throw events dominate the topography, and under the duff layer are significant amounts of alder in advance decay (appx. 900ft^3/acre). Wind-throw in this location continues as evidenced by immature hemlocks that have been thrown in the last year. Susceptibility of trees to wind-throw on this slope is probably due to hardpan underlying shallow soils, a typical soil configuration associated with glacial deposits in the Puget Lowlands.

Northeast corner slide area

Adjacent property owner activity has contributed to a large-scale slump in the northeast portion of the park (Map 7). Restoration efforts have occurred on and below the slumped area. Some plants used in the restoration were inappropriate for the light and water conditions at this location, and they have subsequently died, or are dying.

Southeast invasive weeds - blackberry and ivy

A significant English ivy problem exists in the southeast corner of the park (Map 7). At the area where the trail terminates in this portion of the park, ivy blankets the floor of the hardwood forest to the exclusion of many species. Ivy can also be found climbing the canopy of alders and madronas. Up the ravine from this location and outside of the park boundaries, the ivy is clearly a significant problem and will continue to provide a source of infestation.

Himalayan blackberry removal has been the focus along the trail and boundary of the park in this location during the last year. The area that has been weeded will require regular monitoring and cutting back of the new sprouts of blackberry over a period of several years. Higher light conditions in the hardwood forest to the north and east of the terminating trail has permitted the blackberry to become established over significant areas on the upland hillside as well. This area is classified as moderately invaded by weeds. Without intervention, the blackberry will continue to cover the shrub layer.

Northern edge - lack of structural and species diversity

The north edge of the park between the Barton Street and the stream, and east of the Barton Street entrance is short of structural and species diversity in the canopy (Map 7). This area was once known as 'the bike jump' area. Canopy coverage is roughly 60% and predominately red alder and bigleaf maple.

Northwest corner - denuded slope at rope swing area

The primary area of intense human caused disturbance in the H/MMA is commonly called the 'rope swing area' (Map 7). This area is located between the Forest Court entrance and the creek, at the base of an extremely steep slope, on the boundary between a Conifer Forest Type, and a Mixed Forest Type. The slope of the rope swing area is also very steep and the soil has been compacted.

4.2.3 Riparian Forest Management Area

The Riparian Forest Management Area (RFMA) is an area closely related to the wetlands. It consists of several discrete patches (Map 4). The section on the north side of the park is almost the entire length of the park and is dominated by a portion of the largest wetland.

Focus Areas in the RFMA

Barton Street entrance: lack of structural and species diversity in stream buffer

This Focus Area is also a part of the Focus Area in the H/MMA referred to as 'the bike jump area', though the bike jump did not extend into the riparian area. Much of the area is bare ground.

Cambridge Street entrance: adjacent neighbor dumping

Several neighbors on the east side of the park have dumped yard waste and other solid waste onto the slopes adjacent to the park (Map 7). While technically the dumping may be on private property, it affects vegetation within the park and may influence slope stability by killing the underlying vegetation and by increasing weight on the slope soil surface.

Fletcher Street right-of-way: weeds in upland wetland buffer

The Fletcher Street right-of-way is one of the more heavily weed-infested areas in the park (Map 7). The stream buffer areas here have a higher percentage of invasive species coverage, as well as a larger diversity of invasive species than most other areas.

4.2.4 Wetlands Management Area

Wetlands occupy a large portion of the park. The largest wetland corresponds roughly to the largest area of Riparian Forest Type. Several smaller wetlands are located adjacent to the Hardwood or Mixed Forest Types (Map 3). The majority of Focus Areas in the Wetland Management Area (WMA) are related to trail interfaces. Most wetland issues will be difficult to address without significant trail work. Until wetlands and trails are addressed as an integrated system, vegetation recommendations in the WMA are targeted at the reduction of wetland disturbance through barrier plantings at contact areas between wetlands and trails.

Seattle Public Utilities (SPU) is addressing several areas of trail erosion and runoff into wetlands. Specifically: The Cambridge Street entrance; a portion of trail south of the 'big bridge' that directs trail runoff into the wetland; and a reworking of the wetland access at the 'big bridge.'

Focus Areas in the WMA

Wetland/Stream/Trail Junctions

The main trail/wetland interface is located at the area referred to as the 'big bridge.' The big bridge is located at the first stream crossing after entering at Barton Street (Map 7). This location is often used by pet owners to allow their dogs access to the stream for drinking and occasionally for off-leash play. Vegetation is almost nonexistent. Stream siltation is increased at this area due to the lack of vegetation and trampling by people and dogs.

Just upstream of this location is the area used for salmon fry release by school children and community groups. SPU will reconstruct the area around the bridge to improve stream conditions. Ideally, this rebuild will stop access to the stream, except at the point of salmon fry releases. The point of the releases will be improved and rebuilt specifically for that purpose as part of the in-stream wood placement to be installed here.

Cambridge Street Erosion

Significant surface water runoff and erosion results in sedimentation of the wetland and stream at this location (Map 7). Seattle Public Utilities is working toward design solutions for the surface water runoff. The SDPR trails crew will be coordinating with SPU on trail design.

Boardwalk area

The boardwalk itself may be causing damming of the seeps and stream at this location (Map 7). Off trail use of this area is unlikely due to the mucky nature of the soils, so barrier plantings are not necessary. If vegetation work occurs in this area, the focus should be to increase the diversity of wetland species. Future work on the boardwalk or trails may change the hydrology and will most likely impact the nature of the vegetation. Species selection for vegetation projects should reflect these changing conditions.

4.2.5 Trails Management Area

The Trails Management Area (TMA) is the area within five feet of any trail throughout the park. The focus of recommended vegetation work is for the safety of park users. Excessively steep trails are discussed because vegetation work will be required either as barrier plantings to close trails or as a way to mediate the compaction and erosion damage caused by the trail gradient.

Focus Areas in the TMA

Hazard trees adjacent to trail

Eight potentially hazardous trees were located adjacent to the main trails (Map 7). Hazard trees are determined based on the size of the part most likely to fail, the likelihood of failure, and the chance that it would hit a target such as a structure or a person when it fell. All trees determined to be potentially hazardous had signs of carpenter ant damage, a hollow portion of the trunk, or were already destabilized and leaning over the trail. A hazard tree assessment should be performed by a qualified certified arborist, and appropriate action should be taken.

Excessively steep trails

The SDPR trail crews have been performing trail work in the park for the last year. Most trail work has focused on the main trail between the Barton Street entrance, the Forest Court entrance, and the SW 97th Street entrance. The remaining trail work to be performed will be predominately on the west end of

the park, near the Church parking lot, and at the Cambridge Street entrance in conjunction with work being performed by SPU to reduce surface water runoff into the park. As of this writing there has been little to no public discussion of the ultimate trail configuration in the park. The list of excessively steep trails that follows is simply a list of trails that have been commented on in other park documents such as the *Vegetation Assessment for Fauntleroy Park*, or are trails noted by Arborwise, LLC as excessively steep. The consequences of these steep trails include the creation of rogue trails, or an unintentional rerouting of foot traffic off of those trails resulting in nearby vegetation being affected by trampling.

- *Large central portion of conifer forest type*
- *Between stream and Barton Street entrance*
- *Eroding trails at northwest corner*

5.0 VEGETATION TREATMENTS OF FOCUS AREAS

This section outlines the goals and treatments of each Focus Area. See Appendix C for guidance on timing, strategy, and maintenance and management practices. Suggested species appropriate for management areas follow the Focus Area treatments.

5.1 Focus Area Eastern Strip of the CMA

The predominant problem in this Focus Area is invasive weed control. Ivy is the most significant weed in this strip of the CMA. On the north end near the trail that begins at the Cambridge Street entrance, it blankets the ground and climbs the trees. Some of the ivy covers private property and climbs private trees. Friends of Fauntleroy Park is working with adjacent property owners to gain permission to remove it from these locations.

Blackberry has invaded an area on the south end of this strip in the Roxbury right-of-way where the Douglas-fir canopy has opened permitting more light to the understory. This patch of blackberry should be prevented from expanding farther into the more open forest area.

Estimated Area:	One acre
Goal:	Retain and expand diverse conifer habitat
Objective:	Contain the spread of ivy and blackberry and reduce coverage as resources become available.
Treatment:	Manually remove weeds
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Minimum: Weed boundaries stabilized

5.2 Focus Area Northwest Section of CMA

This focus area is at the entrance to Forest Court. The Friends of Fauntleroy Park have weeded this area and reduced the weed coverage considerably. However, it will be necessary to monitor this site regularly to prevent another infestation.

Estimated Area:	One acre
Goal:	Retain and expand diverse conifer habitat
Objective:	Eliminate invasive weeds. Encourage regeneration of native species
Treatment:	Remove weeds as needed
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Percent cover of weeds equals less than 5%

5.3 Focus Area Wind-throw Area North Central Region of H/MMA

The wind-throw area is due west of the Boardwalk. Evidence of past events lead us to believe that mature trees will continue to be subject to wind-throw. Natural regeneration should be adequate to replace mature trees as they die or drop out. We suggest monitoring this area for weeds as gaps in the canopy occur. If future efforts to plant are made in this location, areas for planting conifers such as Douglas-fir should be carefully selected based on light and soil conditions. Hemlocks might normally be considered an appropriate species based on the amount of available rotting CWD, but they currently appear to be more subject to wind-throw than the hardwood species at this location. Due to difficulties in site conditions for coniferous species, selection should include highly adaptable native hardwoods such as bigleaf maple.

Estimated Area:	10,000 ft^2
Goal:	Retain native diversity and expand conifer forest habitat
Objective:	Encourage regeneration of coniferous and other appropriate tree species by allowing natural regeneration and limiting access to the site
Treatment:	See monitoring
Monitoring:	Once a year in June to assess or weed invasion
Performance Standard:	Percent cover of weeds equal less than 5%

5.4 Focus Area Slide Area in Northeast Corner of H/MMA

The slide area is along the northern boundary of the park. Restoration efforts in this slide area have been moderately successful thus far. This area needs to be monitored

for success of planting as well as to prevent invasive species from colonizing the bare ground. Assessment of the hydrologic conditions at this location should occur and appropriate species selection should be based on the hydrology. Efforts to revegetate the slope should continue.

Estimated Area:	5,000 ft^2
Goal:	Expand and increase forest and wildlife habitat
Objective:	Revegetate slope with multi-layered species (trees, shrubs, groundcovers)
Treatment:	Plant trees and shrubs (See species list 5.16) Groundcover densities or mulch to outcompete weeds (see Appendix C)
Monitoring:	Monitor two times per year in May and August
Performance Standard:	Plant survival should be between 75-80% in year one and stable at greater than 60% in year 3

5.5 Focus Area Invasive Weeds in Southeast of the H/MMA

Located along the southeast boundary of the park, ivy infestation is at severe levels. Until resources can be provided for large-scale removal and replanting, the ivy should be prevented from spreading beyond its current boundaries. Himalayan blackberry removal has been the focus along the trail and boundary of the park in this location during the last year. The area that has been weeded will require regular monitoring and cutting back of the new sprouts of blackberry over a period of several years. Without intervention, blackberry levels will increase to severe levels and continue to cover the shrub layer.

Estimated Area:	Two acres
Goal:	Eliminate invasive weeds
Objective:	Encourage regeneration of native species and growth of diverse understory species
Treatment:	Manually remove blackberry Contain ivy
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Percent cover of weeds equals less than 5%

5.6 Focus Area Lack of Structural and Species Diversity on North Edge of H/MMA

South and east of the Barton Street entrance, light conditions are adequate to permit the establishment of hemlock and cedar. Douglas-fir may be an option in those areas that are closest to the park boundary on the north where light conditions may be bright enough.

Estimated Area:	0.5 acre
Goal:	Retain native diversity and expand forest and wildlife habitat
Objective:	Revegetate with multi-layered species – trees, shrubs, and groundcovers
Treatment:	Plant trees and shrubs (See species list 5.16) Groundcover densities or mulch to outcompete weeds (see Appendix C)
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Plant survival should be between 75-80% in year one and stable at greater than 60% in year 3

5.7 Focus Area Denuded Slope at Rope Swing Area in Northwest Corner of H/MMA

The rope swing area is located south and east of the Barton Street entrance. Restoration efforts in this area should focus on improving the soil conditions by loosening and aerating the soil in addition to planting. Care should be taken to prevent slope instability by using a geotextile fabric for erosion protection.

Estimated Area	2,000 ft^2
Goal:	Expand and increase forest and wildlife habitat
Objective:	Revegetate with multi-layered species – trees, shrubs, and groundcovers
Treatment:	Plant trees and shrubs (See species list 5.16) Groundcover densities or mulch to outcompete weeds (see Appendix C) Improve soil aeration
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Plant survival should be between 75-80% in year one and stable at greater than 60% in year 3

5.8 Focus Area Barton Street Entrance Lack of Structural and Species Diversity in Stream Buffer RMA

Light soil and water conditions are appropriate for cedar and hemlock. Increasing diversity and density in the shrub layer will provide benefits to the stream corridor and wildlife habitat.

Estimated Area:	10,000 ft^2
Goal:	Regain health of riparian system and eliminate stream sedimentation
Objective:	Revegetate with multi-layered species – trees, shrubs, and groundcovers

Treatment:	Plant trees and shrub layer in stream corridor (See species list 5.16) Groundcover densities or mulch to outcompete weeds (see Appendix C)
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Plant survival should be between 75-80% in year one and stable at greater than 60% in year 3

5.9 Focus Area Cambridge Street Entrance Dumping RMA

This focus area is located to the north and west of the Cambridge Street entrance. Yard debris dumping should be discontinued and removed from the park boundaries. Vegetation conditions in the park could improve by educating bordering neighbors about proper yard debris disposal.

Estimated Area:	4,000 ft^2
Goal:	Eliminate dumping of yard debris and household garbage
Objective:	Recovery of current native species and maintain slope stability
Treatment:	Remove or disperse yard debris, remove garbage, and educate homeowners
Monitoring:	Monitor yearly in July (mid-summer)
Performance Standard:	No dumping evident.

5.10 Focus Area Fletcher Street Right-of-Way Weeds in Upland Wetland Buffer RMA

Due to the weed diversity, degree of coverage, and the overall topography, removal of invasive plants at this location is a large-scale project that will require a variety of methods of plant removal. Containing the existing weed problem rather than attempting to eradicate weeds at this location will allow resources to be directed to other areas in the park that have better odds for native vegetation recovery. When resources become available for a high level of weed removal and planting, this area is a good candidate for restoration efforts.

The exception to the containment strategy is the Japanese knotweed infestation outside of the park boundaries in the Fletcher Street right-of-way. Due to the likelihood of movement of this pest into the park via water transport and vegetative reproduction, this weed should receive the highest priority for removal and eradication. Coordination will be required with Seattle Department of Transportation, and adjacent private property owners.

Estimated Area:	One acre
Goal:	Regain and maintain the health of the riparian system
Objective:	Contain the spread of ivy, blackberry, holly, and cherry laurel until resources become available for large-scale removal and restoration.
Treatment:	Manually remove weeds as they invade beyond the current boundaries. Immediate removal of Japanese knotweed as it appears with in park boundary.
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Weed boundaries stabilized until project priority re-evaluated.

5.11 Focus Area Wetland / Stream / Trail Junctions RFMA

The stream and wetlands in this area would benefit from barrier plantings that prevent off-trail activities and limit access to the stream. As one of the main areas in the park where the wetlands are visible, carefully designed plantings will provide an opportunity to educate park users about the appearance of healthy wetlands. Access to the salmon release location should be considered when planting barrier vegetation.

Estimated Area:	2,000 ft^2
Goal:	Increase quality of wetland and eliminate stream sedimentation
Objective:	Increase diversity and barrier vegetation at wetland trail interfaces and reduce access to stream at wetlands and bridges.
Treatment:	Install shrubs and herbaceous plants that are appropriate to habitat and prevent physical entry
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Wetland and stream are not easily accessible from trails

5.12 Focus Area Cambridge Street Erosion RFMA

Revegetation at this location should focus on limiting off-trail use to reduce soil movement and siltation of the stream and wetland and recovery of the areas damaged by the runoff problem. Vegetation installation must follow completion of SPU work and trail reconstruction by SDPR.

Estimated Area:	2,000 ft^2
Goal:	Eliminate water runoff and stream and wetland sedimentation
Objective:	Repair surface water runoff problem, revegetate slope, and redesign trail
Treatment:	Plant trees and shrub layer in stream corridor (See species list 5.16)

	Groundcover densities or mulch to outcompete weeds (see Appendix C) (To be completed by SPU)
Monitoring:	Monitor two times yearly in May and August
Performance Standard:	Plant survival should be between 75-80% in year one and stable at greater than 60% in year 3

5.13 Focus Area: Boardwalk Area WMA

The Boardwalk area is a small lobe located on the western end of the northern arm of Wetland D. The trail bisects the tip of this lobe via a wooden boardwalk that has recently been the focus of repair work. The vegetation around this area lacks structure and diversity.

According to SDPR staff, the boardwalk has been repaired to the extent possible without extensive rebuilding of the structure. Any work on the structure will probably alter the hydrology and will certainly negatively effect the vegetation. No vegetation work should occur until design and completion of a new trail or boardwalk is complete.

Estimated Area:	4,000 ft^2
Goal:	Increase quality of wetland
Objective:	Increase diversity of vegetation following replacement of boardwalk
Treatment:	Install wetland species (See Section 5.16)
Monitoring:	Monitor twice a year in May and August following replacement of the boardwalk and installation of wetland vegetation
Performance Standard:	70-80% survival in the first year

5.14 Focus Area: Hazard Trees

Eight potentially hazardous trees have been located along the trails in the park. The trees have been destabilized by wind or insect damage, others, others have cavities that may represent decay in the main stem. Each of them represents a possible safety hazard to park trail users. Using standards established by the International Society of Arboriculture, these hazards should be evaluated and the trees removed if the risk to park users is determined to be high.

Estimated Area:	8 trees
Goal:	Provide relatively safe walking trails from overhead tree danger
Objective:	Remove or mitigate tree hazards

Treatment:	Assessment of trees by a qualified ISA certified arborist, remove or mitigate hazards, any tree or branch removal should stay on site to be used for restoration activities or decomposing CWD.
Monitoring:	Monitor one time per year for potentially hazardous trees along the trail
Performance Standard:	Evaluation report and removal of hazards

5.15 Focus Area: Excessively Steep or Eroding Trails

Trails in two locations are excessively steep. One is a north/south trending trail that forks to the south from the main trail roughly 200 feet from the Barton Street entrance. The other excessively steep trail is located in the southern portion of the park and is predominately in the large central portion of the CMA. It is an east/west trending trail that forks to the East from the main trail roughly 200 feet inside of the SW 97th street entrance. A third location with excessively steep and eroding trails is in the northwest portion of the western lobe of the park. SDPR staff intend to rework the trail in this location as a continuation of work that has occurred in the past year. Additional trail work is unlikely without a specific trails plan. Once a trail plan is devised with community and SDPR staff input, the entrance of steep trails should be closed using natural appearing barriers of plants, brush piles or downed wood. Compaction of the soil will need to be reduced before planting can occur. These areas will be good candidates for vertical mulching. Trails will need to be planted with native species appropriate to the forest type in which the trails lie to prevent invasion of weeds adapted to disturbed sites.

Estimated Area:	500 feet of trails
Goal:	Safe trails throughout park
Objective:	Walkable trails that do not suggest alternate routes and do not cause stream and wetland sedimentation
Treatment:	Have trails evaluated by SDPR trails crew with community input. Close appropriate trails.
Monitoring:	One time yearly to note trail use and abuse
Performance Standard:	Excessively steep trails closed and unused. Park users stay on designated trails and do not create social trails

5.16 Species Planting Priority Tables

Table 5. Suggested Tree Species for Management Areas.

Common name	**Latin name**	**Hardwood, and mixed hardwood/ conifer**	**Conifer**	**Riparian**
		Planting Priority	**Planting Priority**	**Planting Priority**
bigleaf maple	*Acer macrophyllum*	Low	Low	Med
Pacific madrone*	*Arbutus menziesii*	Low	Low	
Pacific dogwood	*Cornus nuttallii*	Med	Med	
black cottonwood*	*Populus balsamifera ssp trichocarpa*	Low	Low	High
bitter cherry	*Prunus emarginata*	Med		Med
Douglas-fir*	*Pseudotsuga menziesii*	Med	Low	High
western red cedar	*Thuja plicata*	Low	Low	Med
western hemlock	*Tsuga heterophylla*	Low	Low	Med

Table 6. Shrubs and Small Trees Suggested for Management Areas.

Common name	**Latin name**	**Hardwood, and mixed hardwood/ conifer**	**Conifer**	**Riparian**
		Planting Priority	**Planting Priority**	**Planting Priority**
vine maple	*Acer circinatum*	Med	Med	Low
hazelnut	*Corylus cornuta*	Low	Low	Low
salal	*Gaultheria shallon*	Low	Low	Low
ocean spray	*Holodiscus discolor*	Low	Low	Low
dull Oregon grape	*Mahonia nervosa*	Low	Low	Low
Indian plum	*Oemlaria cerasiformis*	Low	Low	Low
Devil's club	*Oplopanax horridus*			Med
swamp gooseberry	*Ribes lucustre*			Med
thimbleberry	*Rubus parviflorus*	Low		Med
salmonberry	*Rubus spectabilis*			Low
Pacific willow*	*Salix lasiandra*			Med
Scouler's willow*	*Salix scouleriana*			Med
red elderberry	*Sambucus racemosa*	Low	Low	Low
snowberry	*Symphoricarpus albus*	Low		
Pacific yew	*Taxus brevifolia*	Med	Med	
evergreen huckleberry	*Vaccinium ovatum*	Low	Low	
huckleberry	*Vaccinium parvifolium*	Low	Low	Low

Table 7. Herbs and Groundcovers Suggested for Management Areas.

Common name	**Latin name**	**Hardwood, and mixed hardwood**	**Conifer**	**Riparian**
		Planting Priority	**Planting Priority**	**Planting Priority**
lady fern	*Athyrium filix-femina*	Low	Low	Med
deer fern	*Blechnum spicant*	Low	Low	Med
wood sorrel	*Oxalis oregana*	Med	Med	Med
Sword fern	*Polystichum munitum*	Low	Low	Low
fringe cup	*Tellima grandiflora*	Low		Med
foam flower	*Tiarella trifoliata*	Med		Med
piggy-back-plant	*Tolmeia menziesii*	Med		Med
starflower	*Trientalis latifolia*	Med	Med	
western trillium	*Trillium ovatum*	Med	Med	Med

Table 8. Suggested Species for Wetland Planting.

Common name	**Latin name**	**Planting Priority**	**Notes**
black cottonwood*	*Populus balsamifera ssp trichocarpa*	High	Needs full sun, sprouter
western red cedar	*Thuja plicata*	High	Basic to PNW and wetlands
red osier dogwood	*Cornus sericea (aka stolonifera)*	Low	Common in restoration projects
black twinberry	*Lonicera involucrata*	Med	
Devil's club	*Oplopanax horridus*	High	Needs good drainage
Cascara	*Rhamnus purshiana*	Med	found in most wetlands
stink currant	*Ribes bracteosum*	Med	Transition
black swamp gooseberry	*Ribes lucustre*	Med	Can take drought
clustered wild rose	*Rosa pisocarpa*	Med	Will hybridize with Nootka rose
Pacific willow*	*Salix lasiandra*	Med	Needs sun, common, prefers riparian
Scouler's willow*	*Salix scouleriana*	Med	Needs sun
Sitka willow*	*Salix sitchensis*	Med	Needs sun, common
lady fern	*Atherium filix-femina*	Med	Common, shade tolerant
deer fern	*Blechnum spicant*	Med	Needs shade and moisture, evergreen
slough sedge	*Carex obnupta*	Med	Full shade, common
spiny wood fern	*Dryopteris expansa*	Med	Does well in muddy soil
Large-leaved avens	*Geum macrophyllum*	Med	Common
northern mannagrass	*Glyceria borealis occidentalis*	Med	Tolerates up to 3' of water
tall mannagrass	*Glyceria elata*	Med	Prefers streamside
water leaf	*Hydrophyllum tenuipes*	Med	Wet forest, no indicator status
skunk cabbage	*Lysichiton americanum*	Med	Common
water parsley	*Oenanthe sarmentosa*	Low	Common, hardy good amphibian habitat
small fruited bulrush*	*Scirpus microcarpus*	Med	Needs full sun, common
Cooley's hedge-nettle	*Stachys cooelyae*	Med	Common

* species that require sun conditions

Priority Definitions:
Low: Appropriate species for the forest type, but it is present in adequate numbers and not necessary to plant.

Med: Appropriate species for the forest type, but present populations should be augmented OR species is not present in the forest type, but is typical and would be expected in low numbers.

High: Is present in few numbers and should be planted in large numbers whenever possible OR Not present but is typical and expected in the forest type, and should be represented in large numbers in most planting project within the given forest type

No priority rating: Not appropriate species for forest type OR no specific priority to plant species.

Refer to full species list in Appendix D for species site and light conditions, placement and spacing requirements.

6.0 MONITORING

Monitoring of the work performed as directed in this VMP provides an important feedback loop by assessing whether the management of the park is meeting the Goals and Objectives outlined in Section 2.1 of this Plan. Monitoring for specific projects requires 1) evaluating the project design, 2) evaluating the success of the project implementation, and 3) follow up to determine if the project has achieved the desired goals. Monitoring for invasive weeds requires 1) regular surveillance of the park, and 2) scheduled follow-up work in weeded areas. A monitoring plan will outline details specific to the activity providing the quality assurance necessary for successful projects.

6.1 Project Monitoring

Monitoring is an important part of any project because it allows evaluation of the success of planning and implementation, and therefore, the success of the project. Problems identified early in the project allow for the appropriate corrective action to meet the stated goals and objectives. When monitoring plans are developed, followed, and documented, project success is possible over time, staff changes, and unexpected events. Ultimately, subsequent projects benefit from the collection of data and documentation of projects as they are designed, implemented, and monitored.

6.1.1 Restoration projects

Monitoring for a minimum of three years is recommended for any project in Fauntleroy Park. Development of a monitoring plan should occur when projects are being planned. Each monitoring plan is site specific with goals and objectives that may differ based on site conditions. Any number of site parameters can be measured and used to evaluate a project, but most projects in the park will be restoration of degraded sites and invasive weed removal. The information most relevant to evaluating success will be measuring the survivability and growth of installed plants and absence of removed species.

Below is a list of parameters to measure as part of a monitoring program typical of projects for Fauntleroy Park.

Monitoring Plan Components

Clearly stated goals of the project: a general statement of the expected results (e.g., 0.5 acres of wetland plant community).

Clearly stated objectives of the project: a more specific description of the goal (e.g., Increase cover of obligate wetland species to 50%; or Create buffer zone around wetland areas).

Measurable and quantifiable performance standards relative to the stated goals and objectives: What are the factors that determine achievement of the goals? For example:

- Plant species diversity (minimum number of species).

- Plant survival (minimum acceptable at Year 1 and Year 3), depends on the harshness of site conditions and level of follow-up care, usually in the range of 60-85%.
- Aerial coverage by desirable species (planted and new recruits), depends on site conditions and planting density – starts low but the standard increases to the third year – measured by vegetation class.
- Aerial coverage by invasive plants: maximum thresholds – depends on species and degree of pre-installation coverage.
- Growth of installed plants: stem diameter of trees measured using calipers
- Soil standards: percent organic content in top 12 inches of soil – measure by burn test.

Monitoring methods: How often, what data to collect and how, report format, and deliverable recipients and dates.

Monitoring should be done once a year during the month of June for three to five years and twice a year, May and August, for sites that are anticipated to have more problems or need more care. All reports should include: a brief project background with the goals, objectives, and performance standards included; summary of the result; assessment of the project with regard to performance standards; and a description of recommended actions. Baseline monitoring should be performed by SDPR staff or trained volunteers, with volunteer stewardship opportunities available to continue monitoring in subsequent months or years. Reports should be submitted to SDPR Urban Forestry staff with copies sent to the Fauntleroy Watershed Council.

6.2 Generic Monitoring Form and Protocols

Fauntleroy Park
Maintenance Monitoring Form

Date: *Date of observation*

Observer's Name:

Volunteer Contact Information: *Enter phone number or email*

Focus Area / Project Title:	*Enter Focus Area per VMP or if restoration project has been completed, enter the standard project name used*
Project Goal (per VMP):	*Review VMP for goal and objectives*
Project Objective (per VMP):	*Review VMP for goal and objectives*
Treatment: (as applied)	*Record project work that has occurred most recently*
Treatment Date:	

Measurable Performance Standards: (per VMP)	Achieved
1. Enter Performance Standards as defined in the VMP. If more than 3, use the back of this sheet	YES □ NO □
2.	YES □ NO □
3.	YES □ NO □

Comments and Observations:	*Record observations including failed performance standards, activity in the area (animal or human), and suggestions for correction if necessary.*

Attach annotated project map or annotated aerial photo
An as-built project map or aerial photo should be provided by SDPR to record weed boundaries, etc.

Send Copy to the Fauntleroy Watershed Council at:

Send Original to:
Seattle Dept. of Parks and Recreation
Attn: Mark Mead
1600 South Dakota
Seattle, WA 98108

6.3 Monitoring for Invasive Weeds

Monitoring for invasive weeds throughout the park and including the focus areas requires a less formal method, but more diligent surveys to stay ahead of weed establishment. Documentation is the most important step in monitoring for weeds. Weed populations should be outlined annually on a consistent map, such as the aerial maps provided in this VMP. These "snapshots" are the best way to note the locations and expansions of weed populations. Fauntleroy Park has its share of heavily weed-infested areas; however, many areas show healthy native community structure. Documentation will show weed activity over time and is a tool for determining necessary funding, work requests, and management activities in the park. Weed surveys can be performed by knowledgeable volunteer stewards and at a minimum, should be performed annually and reported to the SDPR.

This VMP should serve as a baseline for major weed-established sites only. The Friends of Fauntleroy Park have more knowledgeable information on specific weed locations and the progress toward their eradication.

6.2.1 Weed Identification

Weed identification skills are an important part of monitoring for weeds. New introductions to western Washington can happen quickly. Recent weeds found include kudzu and water hyacinth; both capable of devastating ecological damage. Annual review of the state and county noxious weed list is advised; however, beware that many weeds may not be listed because they have not yet been classified as a threat to livestock, agriculture, people, or the environment.

If a new plant is encountered and it appears to have weed features (rapid growth and rapid reproduction by seed or runner), have it identified immediately to learn the best eradication techniques. Plants can be identified by the WSU King County Extension through the Master Gardener program. The Hyde Herbarium at the Center for Urban Horticulture also provides plant identification as a service to the public.

6.2.2 Weed Pathways and Establishment

Weed introduction pathways that are possible within Fauntleroy Park include wind, water, wildlife, and people. While these are natural processes and difficult to control, management of the park buffer area and an understanding of weed behavior will aid in the reduction of new weed infestations. These pathways also suggest where monitoring should occur.

Weed monitoring should focus on off-trail disturbance, canopy openings, creek entrances, known weed infestations, recent weeding and restoration sites, and the buffer between private properties and park boundaries. Weeds are opportunistic. Many weeds have seeds that are long-lived. It is best to assume that the park has a seed bank in the soil and any disturbance will allow those seeds to grow.

7.0 PLAN IMPLEMENTATION

This section is meant to provide guidance on setting priorities of the management activities described in previous sections of this VMP. The nature of Fauntleroy Park as an undeveloped, limited-use park eliminates the need for regularly scheduled maintenance activities such as mowing and pruning. All activities in this VMP are treated as special projects in which future monitoring will determine additional necessary activities. Projects consist mostly of weed removal and restoration activities.

Implementation of projects at Fauntleroy Park should always be managed by the staff of SDPR or by the staff of Seattle Public Utilities in instances that the creek and wetlands are the focus of the project. Volunteer stewards can and should be a significant contribution to projects in the park.

7.1 Implementation Priorities

Projects for high priority should focus on containment of rapidly spreading invasive weeds, removal of those that are the least established but potentially threatening, and removal/reduction of weeds that can be removed most easily for the greatest habitat benefit. Restoration/enhancement projects that receive designation as high priority should benefit the most intact habitats to support the greatest variety of wildlife. Restoration projects should be implemented when degraded habitats are contributing to the siltation of Fauntleroy Creek.

Projects have been divided by high and low priority based on threats to people and habitat, and cost and benefit. Specific projects listed in Focus Areas that should be given high priority are shown in Table 9. Low priority projects are listed in Table 10.

7.1.1 High Priority Projects

One project, hazard tree removal, has safety implications and therefore should receive the highest priority for implementation. Education of adjacent property owners has the potential to have an immediate effect on Fauntleroy Park by reducing yard debris dumping and drainage into the park, and possibly recruiting members to the Friends of Fauntleroy Park organization. Planting barrier vegetation is the first step to protect wetland habitat. Removing opportunities for disturbance of wetlands by people and their pets will slow the incursion of weeds and provide for recovery of the habitat.

Table 9. High Priority Projects.

Management Area	Focus Area	Projects	Est. Area	Performed By	Est. Cost
All Park Entrances		• Post educational signs to explain the consequences to the habitat when dogs are allowed to roam free inside the park	<50 ft^2	SDPR	$5,000 - $8,000
All	Neighbors	• Develop and disseminate educational information for bordering property owners regarding drainage, dumping, pets, and invasive species management	N/A	SDPR develop, Volunteer group (school children, etc.) to disseminate	$6,000
Conifer	Eastern Strip	• Contain the spread of ivy and blackberry	1 Acre	Volunteers	$3,500 (tools, herbicides)
Hardwood /Mixed	Slide Area along northern boundary	• Continue restoration with appropriate species to prevent siltation and prohibit weeds	5000 ft^2	SDPR, Contractors	$12,000
	Invasives in SE	• Contain ivy • Remove blackberry	2 Acres	Volunteers	$4,000 (tools, herbicides)
Riparian	Fletcher St Right-of-Way	• Contain weeds	1 Acre	SDPR, SDOT, Contractors, Volunteers	$20,000
	Cambridge Street Entrance Dumping	• Remove yard debris and garbage	4,000ft^2	Volunteers	$8,000 disposal fees
Wetland	Wetland/Stream/ Trail Junctions	• Plant barrier vegetation to prevent park visitors from going off-trail	2000 ft^2	SPU, Contractors,SDPR and Volunteers	$6,000
	Cambridge Street Erosion	• *Revegetate after stormwater repair and trail completion to limit travel off trail and soil erosion	2000 ft^2	SPU	$4,000

Trail	Hazard Trees Adjacent to Trail	• Trees assessed by ISA Certified Arborist • Remove hazard trees	8 trees	SDPR	$5,000
	Excessively Steep Trails	• Work with SDPR trail maintenance crew to eliminate steep and discourage social trails	500 linear feet	EarthCorps, SDPR	$3,000

*Project should occur with trail repair and/or SPU work to maximize resources and lower costs. This timing is critical for high priority listing.

7.1.2 Low Priority Projects

Lower priority projects include mostly plant installation for increase in diversity. These projects are considered low priority due to the cost of materials and labor. The donations of both plants and labor would turn these into high priority projects.

Table 10. Low Priority Projects

Management Area	Focus Area	Projects	Est. Area	Performed by	Est. Cost
Conifer	NW Section	• Remove ivy and blackberry	1 Acre	Volunteers, SDPR	$3,500
Wetland	Boardwalk Area	• *Increase wetland plant diversity	4,000 ft^2	SDPR	$5,000
Hardwood/Mixed Hardwood Conifer	Lack of Diversity on North Edge	• Plant hemlock, cedar, and Sitka spruce	½ Acre	SDPR with Volunteer assistance	$4,000
	Denuded Slope at Rope Swing Area	• Improve soil conditions and revegetate the slope	2,000 ft^2	SDPR with Volunteer assistance	$4,000
	Wind-throw Area	• Monitor for weed invasion	10,000ft^2	Volunteers	41,200
Riparian	Lack of Diversity Near Barton Street Entrance	• Plant Sitka spruce, hemlock, and cedar • Add shrub layer in stream corridor	10,000 ft^2	SDPR with Volunteer assistance	$8,000

* Project should occur with trail repair and/or SPU work to maximize resources and lower costs.

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