

GRIFFIN CREEK PARK NATURAL AREA

Site Management Plan



Prepared for:

King County Park System

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July, 1999

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Acknowledgments

Foresight on the part of the King County Open Space Citizen Oversight Committee (COC), the Metropolitan King County Executive and Council, King County staff, and a diverse group of county residents has made the Waterways 2000 program, and subsequent protection of critical waterways throughout the county, a success.

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Waterways 2000

Waterways 2000 was initiated in 1993 by the Metropolitan King County Executive and Council as a pilot program to establish a system of connected habitat lands and waterways within the County for the protection of salmon and wildlife habitat. Under the leadership of the COC, the County's most critical waterways were identified and methods for their cost-effective acquisition were outlined. The majority of properties were purchased in fee; with others, conservation easements were acquired or they were enrolled in the Public Benefit Ratings System (PBRs), which allows property owners tax reductions for land left in open space. As a result, over 1,600 acres throughout King County now provide:

- Protection of high quality aquatic systems and habitat lands for salmonids and wildlife
- Preservation of properties of cultural, scenic, and historic importance
- Educational and passive recreational opportunities
- Opportunities for public participation in natural area stewardship

The Waterways 2000 partnership between King County, landowners, and the community has proven to be effective in acquisition and stewardship of valuable natural areas. Public support will continue to be critical in the long-term protection of waterways and the expansion of protection to other basins, and the Waterways program will provide a successful guide for those efforts. As our population grows, so will our need for viable wildlife habitat, healthy stream systems, and clean water. Future generations of residents and wildlife will benefit from this important effort.

EXECUTIVE SUMMARY

Despite commercial timber harvest in its headwaters, Griffin Creek (WRIA # 07.0376) is known for its dense salmonid spawning populations. To protect this resource, more than 46 acres of forested land (in non-contiguous parcels) were purchased as part of the Waterways 2000 program and will become the Griffin Creek Park Natural Area. These parcels are located east of Seattle between Carnation and Fall City, east of the Urban Growth Area (UGA) boundary line. The northern parcel, over 27 acres of forest and former pasture lands, is bisected by the Snoqualmie Valley Regional Trail (SVT) and is directly adjacent to the Archdiocese of Seattle's Camp Don Bosco. This parcel's proximity to the creek, forest lands, and regional trail will provide excellent opportunities for habitat protection as well as for continued low-impact passive recreation. The 19-acre southern group of small holdings is roughly three-quarters of a mile upstream, isolated and undeveloped. The listing of wild Puget Sound Chinook and bull trout under the federal Endangered Species Act (ESA) will likely result in increased protection and restoration activities within the Snohomish/ Snoqualmie basin.

Natural Area management will focus on the protection and enhancement of the natural systems onsite: its fish and wildlife habitats, corridors, and scenic character. Where public use does not compromise these systems, the Natural Area will provide low-impact passive recreational, interpretive and educational opportunities. The following site plan goals reflect the goals of the Waterways 2000 program as well as KC Parks' management of natural areas within the Parks system:

- Preserve, protect and restore natural systems for fish and wildlife habitat.
- Preserve the rural nature of the site in keeping with surrounding community.
- Eliminate incompatible uses which degrade sensitive site resources.
- Provide site improvements to direct public use in appropriate areas.
- Provide interpretive experiences to the community and foster public involvement in site stewardship.
- Comply with restrictions resulting from the listings of salmonids and other species under ESA.
- Implement recommendations in phases according to priority order and available funding.

Significant resources at Griffin Creek include:

- Griffin Creek, a King County Class I stream system, provides significant habitat for a number of salmonids including coho and steelhead as well as some of the most concentrated coho spawning densities in the Snoqualmie River system.
- Habitat for terrestrial and aquatic wildlife, including native amphibians.
- Beaver ponds in the creek's main stem that may somewhat mitigate effects of upstream timber harvesting.
- Opportunities for the restoration of natural floodplain features as well as enhancement of instream and riparian habitats.
- Natural terraced topography that provides varied levels of public access and potential for restoration.
- Passive recreational, interpretive and educational opportunities adjacent to the Snoqualmie Valley Trail.

The following general planning and design elements are recommended for the Griffin Creek Park Natural Area:

- Maintain and enhance the functional integrity of onsite stream and riparian systems for salmonid and wildlife populations.
- Retire and replant degraded, informal use areas with native trees and shrubs, encouraging maximum regrowth of forested riparian habitat and discouraging creation of new routes through the holdings.
- Restore stream buffers with native plants and conifers to a minimum of 150 feet.
- Designate site uses: day-use picnic area/restroom facilities, nature observation, wetland interpretation/education.
- Provide public access to the upper meadow picnic area and to creek-viewing area in the eastern meadow.
- Upgrade and maintain existing parking area for use by SVT users, Waterways visitors, and occasional Camp users.
- Provide interpretive signage addressing the site's significant resources, historic/current uses and restoration efforts.
- Periodically monitor general site conditions for dumping, illegal access and resource degradation.
- Survey and post site boundaries necessary for maintenance and restoration activities.
- In conjunction with existing County programs, periodically monitor water quality and habitat values for the effects of activities on adjacent properties.
- Coordinate with community groups/schools to steward the property in conjunction with King County Parks.
- At appropriate intervals, review this site plan to ensure that the goals and recommendations are being met and plan for additional restoration or preventative measures if public use threatens onsite natural resources or public safety.
- Pursue future acquisitions and agreements to provide protected habitat links and buffers between the Natural Area and other public and privately-owned parcels, such as the acquisition of Camp Don Bosco for establishment of a Parks environmental education camp.

Part I - INTRODUCTION

Foreword

The Snoqualmie River forms the largest drainage basin in King County, flowing roughly northwest from its source in the Cascade Mountains to its confluence with the Skykomish River near Monroe. The Snoqualmie and its tributaries contain the largest amount of high-quality salmonid habitat in King County and future efforts to protect the region's salmon will most likely focus heavily on this system. One of the important tributaries to this river is Griffin Creek, which drains undeveloped, forested hills to the east of the river's floodplain. Habitat provided in this basin is important for salmonids ascending the Snoqualmie River to spawn (*Figure 1*). In spite of commercial timber harvest within its headwaters, Griffin Creek continues to provide quality wetlands, pools, riffles, and streambed conditions important for spawning and rearing of salmon.

Purpose

The purpose of this document is to provide a record of existing site features and guidelines for future management of a King County Park Natural Area at Griffin Creek. This plan reflects: 1) a site inventory and analysis of existing natural resources and land uses, 2) Waterways 2000 program goals, 3) King County Parks (KC Parks) land classifications, 4) legal and land use restraints, 5) regional connection to other public lands, 6) King County agency recommendations and staff review, 7) public input, and 8) development costs. Resource information in this plan is a summation of the Technical Appendix prepared for the site. All other information was gathered through interagency cooperation, research and field visits. Collectively this data forms the basis for resource management and public use recommendations for the Natural Area. Once approved by KC Parks, design and cost elements will be refined and phased implementation of recommendations will begin.

Site Plan Goals

Natural Area management will focus on the protection and enhancement of the natural systems onsite: its fish and wildlife habitats, corridors, and scenic character. Where public use does not compromise these systems, the Natural Area will provide low-impact passive recreational, interpretive and educational opportunities. The following site plan goals reflect the goals of the Waterways 2000 program as well as KC Parks' management of natural areas within the Parks system:

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- Comply with restrictions resulting from the listings of salmonids and other species under ESA.
- Implement recommendations in phases according to priority order and available funding.

Location

The Griffin Creek Park Natural Area consists of two unconnected parcels within the lower Griffin Creek watershed of unincorporated King County between Carnation and Fall City. The sites are adjacent to the Carnation-Fall City Road (State Highway 203) and the Snoqualmie Valley Regional Trail (SVT). The northern parcel is east of Highway 203 and crosses NE 11th Street on the north bank of Griffin Creek. The southern parcel is approximately ¾ of a mile upstream and south of the East Griffin Creek Road NE logging road (*Figure 2*).

[insert Fig. 1]

[insert Fig.2]

Description

The large majority of Griffin Creek basin's approximately 12,000 acres is in private, commercial forest land, all of which is outside of the UGA boundary line. Second and third generation forest is interspersed with agricultural and rural residential land uses. The two areas which form the larger Natural Area are distinguished as "Griffin Creek North" and "Griffin Creek South".

Griffin Creek North

This 27.86-acre parcel was formerly a part of the adjacent 203-acre Camp Don Bosco to the northeast. The parcel runs roughly northwest-southeast, following the course of the creek. A strip of Weyerhaeuser Corporation land along the northeast boundary separates the site from East Griffin Creek Road NE. The Davidson Family Sawmill borders the site to the north, horse pastures and residences to the south and west, and the SVT bisects the site crossing Griffin Creek via a trestle bridge. Along the Sawmill boundary parking is available for the Camp as well as for trail users. Portions of the Natural Area were surveyed and posted during the summer and fall of 1998 (*Figure 3*).

Griffin Creek South

Over 19 acres make up the Griffin Creek South parcel. The largest portion, known formerly as the "Hall" parcel, comprises a large, triangular-shaped 17.58-acre forested hill to the south of Griffin Creek. Small, undeveloped lots line both banks of Griffin Creek and delineate this parcel's northeast boundary. Four of these small, "spur" parcels are also part of the Natural Area, three of which link the main parcel to Griffin Creek and the fourth (on the north side of the creek) which extends to East Griffin Creek Road NE. All parcels are potentially accessed by an easement road which is recorded but not yet built. The main parcel is steeply sloped and is drained by an unclassified stream. The northernmost spur (0.182-acre) contains approximately 103 feet fronting Griffin Creek. The middle parcel (0.52-acre) and the third parcel (0.37-acre to the southeast) each contain approximately 80 feet of frontage along the creek. The parcel on the north side of the creek (0.35-acre) contains 80 feet of creek frontage. Survey and posting of Griffin Creek South and its road easement was completed in 1998.

Conservation Significance

Cascades forests are linked to Puget Sound lowland habitat along the Snoqualmie River watershed as identified in the Wildlife Habitat Network in the 1996 King County Comprehensive Plan. Griffin Creek's remaining habitat and its role as a tributary to this larger system were important components in its selection as a Waterways 2000 target basin. Despite changes in the upper watershed resulting from commercial forest harvest (such as the loss of riparian forest, increased sedimentation, and subsequent changes in channel form), Griffin Creek provides important habitat for salmonids ascending the Snoqualmie River to spawn in the system's tributaries. Large numbers of steelhead and concentrated coho spawning densities are found in the Snoqualmie River system. The Griffin Creek Park Natural Area is part of nearly 350 acres within this basin that have been purchased as part of the Waterways 2000 program. Protected lands along Patterson Creek, Canyon Creek and the Middle Fork of the Snoqualmie River will also provide habitat and water quality protection. Additional purchase of lands and easements for conservation within the basin—anticipated by the Waterways program—would further increase protected habitat for the variety of fish and wildlife species dependent on the system.

Passive Recreational and Educational Significance

Public understanding and appreciation of the Natural Area will be an asset to the County's efforts to restore salmonids under ESA, as well as essential to public involvement in the stewardship of the Natural Area. More than 18,000 acres of parks and open space lands, including more than 200 miles of Regional trails, are maintained by the King County Department of Parks and Recreation. Significant nearby King County Parks include the Tolt-MacDonald Park to the north near Carnation and the Carnation Marsh Natural Area to the west. The Patterson Creek Park Natural Area, another Waterways 2000 acquisition in the Snoqualmie Basin, lies to the west also, north of the county's Section 36 Park. The northern site's proximity to the Snoqualmie Valley Trail (SVT) and Camp

Don Bosco was an important factor in its purchase from the Archdiocese of Seattle. The eight-foot wide, soft-surface SVT regional trail and its 33 trestles essentially parallels the Snoqualmie River on an abandoned railroad right-of-way, connecting Snohomish County to Cedar Falls south of North Bend. Pedestrians, non-motorized vehicles and equestrians alike enjoy the many opportunities for nature observation and recreation along its length. The parking area adjacent to the SVT and Natural Area provides local access to the trail, which bisects the site. The trestle crossing Griffin Creek at the Natural Area provides a low-impact and superior vantage point for salmon and wildlife observation as well as viewing river processes and restoration activities. Interpretive and educational programs could highlight the importance of the river to habitat corridors, both fish and wildlife. History of forestry and agriculture as well as Native American and early European settlement could be part of the educational program. Restoration of heavily used areas could provide a good opportunity for public education on watershed processes within the basin as well as stimulate interest and ownership in the management of the Natural Area.

Part II - SITE INVENTORY AND ANALYSIS

NATURAL RESOURCES

Topography

Griffin Creek North

Griffin Creek flows out of a narrow, steep-sided ravine and enters the broad Snoqualmie River floodplain where deep alluvial deposits form terraces. Kame deposits, which occurred as streambeds during the last period of glaciation, form steep slopes and plateaus above the Griffin Creek floodplain. Kettles, or small depressions, occur throughout these gravelly deposits.

Griffin Creek South

This site is located in a steep-sided ravine designated as an Erosion Hazard Area in the King County Sensitive Areas Ordinance (SAO) map folio. Steep slopes and the presence of groundwater seeps have resulted in a Landslide Hazard Area designation. Griffin Creek erodes the toe of the slope, increasing slope instability.

Soils

Griffin Creek North

The Everett soils series here are largely gravelly sandy loams with zero to five percent slopes. Permeability is rapid, runoff is slow, and erosion hazard is slight. A small zone of Puyallup fine sandy loam soils is found near the creek. This is a series of well-drained soils that formed in alluvium and is usually found on natural levees adjacent to streams in river valleys. Slopes are zero to two percent.

Griffin Creek South

The gravelly sandy loams of Alderwood and Kitsap soils are found within these holdings. Slopes range from 25 to 70 percent. Runoff is rapid to very rapid and the erosion hazard as well as slippage potential is severe.

Hydrology

Small lakes at higher elevations constitute the primary headwater areas for Griffin Creek, a King County Class I stream. In the upper portion of the watershed, the creek meanders for about three miles through several large wetlands, from approximately river mile 5.1 to river mile 8.3. A large beaver pond wetland system exists in the middle stem of the reach, possibly mitigating to some extent the effects of upstream commercial forest harvest.

[insert Fig. 3]

Downstream of this low-gradient stretch, the creek increases in gradient and flows through a steep-sided ravine, along the Griffin Creek South parcel. At about river mile 1, Griffin Creek flows under the SVT trestle at Griffin Creek North, and across the broad Snoqualmie River floodplain before joining the mainstem of the river.

Griffin Creek North

Griffin Creek flows as a low-gradient riffle through the southern portion of the site. Pools and large woody debris are uncommon in this stretch. A stream survey conducted in the spring of 1997 revealed only 12 pieces of (predominantly deciduous) large woody debris (LWD) and four pools within a 2460-foot stretch of the creek. Stream banks are downcut roughly two to ten feet, particularly along the western end of the reach. Prior to construction of the railroad grade preceding the SVT, it is likely that Griffin Creek meandered through beaver ponds within this relatively broad floodplain. Old-growth western red cedar likely anchored the stream and beaver ponds, as evidenced by cedar stumps in pastures directly west and south of the site. Pastures on the north side of the creek exist in various stages of regeneration within the active floodplain. Portions of this site's pasture areas are seasonally inundated, particularly at the eastern end of the property. A small, seasonal creek originating from a seep south of NE 11th Avenue flows through a deciduous forested wetland and into Griffin Creek just west of the SVT.

Griffin Creek South

A number of seeps flow from the lower portion of the slope on the main property. Several of these seeps form steep channels that decrease in gradient as they approach the creek. The four forested spur parcels exist on the old creek floodplain, each containing 80 feet of creek frontage or more. All are within the stream buffer zone. The majority of land in this area is seasonally saturated and is not likely to be developed. However, the sliver parcel on the north side of the creek lies on somewhat higher ground (though below East Griffin Creek Road NE) and cabins do exist on adjacent properties.

Vegetation

The following general vegetation descriptions are based on plant species observed on both sites from April-May 1997 (*Table 1*) and correspond to mapped natural resources (*Figures 4a & 4b*).

Griffin Creek North

Riparian Zone: A thin band of red alder and black cottonwood forms the extent of the riparian area overstory at Griffin Creek. A thick understory of salmonberry, blackberry (Himalayan and evergreen), willow, Pacific ninebark, snowberry, and Indian plum occurs along the creek's edge, with lady fern and horsetail forming the groundcover. At the eastern end of the site, Douglas fir, western hemlock, western red cedar, big-leaf maple, red alder and a few snags form much of the riparian zone. Two western hemlock snags overhanging Griffin Creek measure 38 inches and 33 inches in diameter, respectively. This small patch of mixed riparian forest has been a source of LWD in the stream system.

Coniferous Forest: Coniferous forest covers a majority of the site. A single cohort of Douglas fir forms the canopy around the parking area on NE 11th Street, with diameters ranging from 10 to 20 inches. Western hemlock and red alder occur in smaller numbers, with salal, vine maple and Oregon grape forming the understory. Several large, open-grown firs of more than 35 inches in diameter form a grove around the former picnic area just off the SVT, and 10-to 20-year-old Douglas fir 6 to 12 inches in diameter allow little light penetration. As a result, understory species are uncommon and moss forms a ubiquitous groundcover. The most mature stand of coniferous forest exists on the old river terrace south of NE 11th Street. Douglas fir 10 to 26 inches in diameter dominate the overstory while western red cedar, western hemlock, red alder, and big-leaf maple occur in the canopy. Western hemlock saplings are common on stumps and logs, and western red cedar occur infrequently as understory trees or saplings. Ivy covers many of the Douglas fir in this area. Fire-scarred stumps, likely the result of slash burning after timber harvest, support red huckleberry and salal. A higher diversity of understory and groundcover species

Table 1. Plant Species Observed at Griffin Creek Park Natural Area*

SCIENTIFIC NAME	COMMON NAME	N	S	SCIENTIFIC NAME	COMMON NAME	N	S
FERNS AND ALLIES:				SHRUBS/ SMALL TREES:			
<i>Athyrium filix-femina</i>	Lady Fern	X	X	<i>Acer circinatum</i>	Vine Maple	X	X
<i>Equisetum</i> spp.	Horsetail	X		<i>Berberis nervosa</i>	Oregon Grape	X	X
<i>Dryopteris</i> sp.	Woodfern		X	<i>Cornus stolonifera</i>	Red-osier Dogwood	X	X
<i>Polystichum munitum</i>	Sword Fern	X	X	<i>Corylus cornuta</i>	Hazelnut	X	
<i>Pteridium aquilinum</i>	Bracken Fern	X	X	<i>Cytisus scoparius</i>	Scot's Broom	X	
HERBS:				<i>Gaultheria shallon</i>	Salal	X	X
<i>Achlys triphylla</i>	Vanilla-leaf	X		<i>Holodiscus discolor</i>	Oceanspray	X	
<i>Claytonia sibirica</i>	Siberian Miner's-Lettuce	X	X	<i>Ilex</i> sp.	Holly	X	
<i>Conium maculatum</i>	Poison-hemlock	X		<i>Lonicera borealis</i>	Twinflower		X
<i>Dicentra formosa</i>	Pacific Bleeding Heart	X	X	<i>Lonicera ciliosa</i>	Western Trumpet	X	
<i>Epilobium angustifolium</i>	Fireweed	X			Honeysuckle		
<i>Geranium robertianum</i>	Robert Geranium	X		<i>Lonicera involucrata</i>	Twinberry	X	
<i>Geum macrophyllum</i>	Large-leaved Avens/Geum	X		<i>Oemleria cerasiformis</i>	Indian Plum	X	
<i>Hypericum perforatum</i>	Common St. Johnswort	X		<i>Oplopanax horridus</i>	Devil's Club	X	X
<i>Lilium columbianum</i>	Tiger Lily	X		<i>Physocarpus capitatus</i>	Pacific Ninebark	X	
<i>Lysichiton americanum</i> *	Skunk Cabbage	X	X	<i>Ribes sanguineum</i>	Red-flowering Currant	X	
<i>Maianthemum dilatatum</i>	False Lily of the Valley	X	X	<i>Rosa</i> sp.	Rose	X	
<i>Myosotis</i> spp.	Forget-me-not	X		<i>Rubus discolor</i>	Himalayan Blackberry	X	
<i>Oenanthe sarmentosa</i>	Water Parsley	X		<i>Rubus laciniatus</i>	Evergreen Blackberry	X	
<i>Ranunculus repens</i>	Creeping Buttercup	X		<i>Rubus parviflorus</i>	Thimbleberry	X	
<i>Sparganium</i> sp.	Burreed	X		<i>Rubus spectabilis</i>	Salmonberry	X	X
<i>Streptopus roseus</i>	Rosy Twistedstalk	X		<i>Rubus ursinus</i>	Trailing Blackberry	X	X
<i>Tellima grandiflora</i>	Fringecup	X	X	<i>Salix</i> spp.	Willow	X	
<i>Tiarella trifoliata</i>	Foamflower	X	X	<i>Sambucus racemosa</i>	Red Elderberry	X	X
<i>Tolmiea menziesii</i>	Piggy-Back Plant	X	X	<i>Spirea douglassii</i>	Hardhack	X	
<i>Trifolium pratense</i>	Red Clover	X		<i>Vaccinium parvifolium</i>	Red Huckleberry	X	X
<i>Trifolium repens</i>	White Clover	X		TREES:			
<i>Trillium ovatum</i>	Western Trillium	X	X	<i>Acer macrophyllum</i>	Big Leaf Maple	X	X
<i>Typha latifolia</i>	Broad-leaved Cattail	X		<i>Alnus rubra</i>	Red Alder	X	X
<i>Urtica dioica</i>	Stinging Nettle	X	X	<i>Malus fusca</i>	Crab Apple	X	
<i>Veronica americana</i>	American speedwell	X		<i>Picea sitchensis</i>	Sitka Spruce	X	
GRASSES:				<i>Populus balsamifera</i> var. <i>trichocarpa</i> *	Black Cottonwood	X	
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	X		<i>Prunus emarginata</i>	Bittersweet Cherry	X	
<i>Dactylis glomerata</i>	Orchard Grass	X		<i>Pseudotsuga menziesii</i>	Douglas Fir	X	X
** + <i>Phalaris arundinacea</i>	Reed Canary Grass	X		<i>Rhamnus purshiana</i>	Cascara	X	
RUSHES AND SEDGES:				<i>Salix lucida</i> ssp. <i>lasiandra</i> *	Pacific Willow	X	
<i>Juncus effusus</i>	Soft Rush	X		<i>Thuja plicata</i>	Western Red Cedar	X	X
<i>Juncus</i> spp.	Rush	X		<i>Tsuga heterophylla</i>	Western Hemlock	X	X
<i>Carex deweyana</i>	Short-scale Sedge	X					
<i>Carex</i> spp.	Sedge	X					

Notes:

*N, S Indicate "Griffin Creek North" and "Griffin Creek South".

** Identifies plant names that have been updated following Hickman (1993). All other plant nomenclature follows Hitchcock and Cronquist (1978).

X Indicates species observed on site April-May, 1997.

Bold indicates non-native species.

+ Indicates native status undetermined.

[insert Fig. 4]

occurs in this area than elsewhere on the site. Indian plum, vine maple and red alder are prevalent alongside less dense Oregon grape, cascara saplings, currant, and holly. False lily-of-the-valley, moss, Roberts geranium, lady fern, wood fern, sword fern, Siberian miner's lettuce, piggyback plant, twisted stalk and trillium form the groundcover.

Deciduous Forest: English ivy covers some of the overstory trees of the deciduous forest canopy composed mainly of red alder and black cottonwood. Indian plum, red elderberry, snowberry, salmonberry and bittersweet cherry and holly saplings form the understory. Forest areas formerly browsed by horses support a sparse understory of creeping buttercup, Siberian miner's lettuce and strawberry. Other herbaceous species will most likely begin colonizing the ground strata in time.

Horse corrals/Pastures: The pastures once containing corrals experienced the most extensive grazing and as a consequence, blackberries and other invasives along the fenced western property line have been controlled. Pasture grasses and forbs form the pasture vegetation, with young Douglas fir, crab apple, Scot's broom and blackberries along the forest margins. Pastures in different stages of succession occur along the floodplain of Griffin Creek and support grasses and a variety of non-native forb species. Red alder, red elderberry and blackberry thickets extend into these areas from adjacent communities. The seasonally inundated pasture area on the east side of the SVT is the narrowest of the pasture areas on site and is in a later stage of succession from pasture to shrubland and deciduous forest. Thickets of blackberry have become established and are interspersed with stinging nettle, reed canarygrass, creeping buttercup, horsetail and red alder extending out from the thin forest band along Griffin Creek.

Deciduous Forested Wetland: Red alder forms a sparse canopy in the wetland/seep area between the SVT and Griffin Creek. Salmonberry, red elderberry and Indian plum occur in relatively low densities on the slightly drier portions of the wetland and evergreen blackberry is common throughout the understory. Clumps of spiraea occur in wetter areas and manna grass, creeping buttercup, large-leaf avens and skunk cabbage compose the groundcover. Native shrubs and trees were planted in portions of this wetland in the winter of 1997 (*Figure 4a*).

Griffin Creek South

Deciduous Forested Wetland: The lower 10-25 percent of this site's slope is a seep covered in deciduous forested wetland. Red alder dominates the overstory and big-leaf maple occurs infrequently on dry hummocks. Salmonberry, vine maple, devil's club and red elderberry compose the dense understory. In the wettest areas of the site, skunk cabbage and lady fern dominate; in slightly drier areas, piggyback plant and stinging nettle predominate. Bleeding heart, bedstraw, swordfern, and trillium occur on drier hummocks. The depth of inundation and/or saturated soils depends on small irregularities of the slope (*Figure 4b*).

Mixed Coniferous and Deciduous Forest: Mixed forest occurs on the upper three-fourths of the slope to the ridge along the top of this parcel. Red alder and big-leaf maple form the canopy here, with a subcanopy of western red cedar and western hemlock. The sparse understory is composed of salmonberry, red huckleberry, and red elderberry and ubiquitous sword fern. Other forb species such as bleeding heart, vanilla leaf, trillium, Siberian miner's lettuce, lady fern and deer fern are present in much lower abundance. A relatively open canopy along the ridge top is composed of Douglas fir, western red cedar, western hemlock, big-leaf maple and cascara. Downed woody debris and snags are common due to "edge-effect" from adjoining clearcuts to the west and south along the ridge. Saplings of western hemlock and western red cedar occur in thick clumps in the understory, along with salal, red huckleberry, Oregon grape, sword fern, bracken fern, and Pacific blackberry. Pacific dogwood, yew, ocean spray, snowberry, twinflower, star flower and vanilla leaf comprise a smaller proportion of the cover. Western trumpet honeysuckle covers many of the saplings and shrubs under the open canopy.

Coniferous Forest: A small patch of coniferous forest in the stem-exclusion stage occurs at the top of the slope and consists of Douglas fir ranging from 22 to 29 inches in diameter, with smaller diameter western red cedar and

western hemlock. Shrubs and forbs are limited to pockets where light penetrates the dense canopy. Fire occurred at some point in the stand development, as evidenced by charcoal on the soil surface as well as burnt logs and stumps.

Invasive Species

In the absence of intervention, non-native, invasive plant species will most likely become more prevalent at Griffin Creek North in particular, especially along property boundaries, roads, and managed corridors. Removal and control of invasive plant species will be an important and long-term management effort throughout the Natural Area. The goal would be to prevent the spread of less common “satellite” populations (limited in distribution and abundance) into unaffected areas via trails and waterways. Pasture areas likely contain state classified noxious weeds, the control of which (Class A species) is mandated by the Washington State Noxious Weed Board. King County currently requires control of most Class B weeds (See *Appendix*, page 25).

Vegetative Succession at Griffin Creek North

Much of the vegetation at Griffin Creek North is in disturbed or early successional stages. The most mature forest stands consist of patches of coniferous forest at the western forest edge and parking lot area. Barring disturbance, these stands will develop old-growth characteristics sooner than deciduous forests onsite. Succession of deciduous forests (especially in the riparian zone) to coniferous forests could be augmented by underplantings of native conifers. Soils in these areas may be compacted and lack organic material, so that disking and amendment may be necessary prior to planting. Blackberries and other invasives could persist in pastures for decades without actions to help tree establishment and growth. Competition from other plants and lack of suitable germination sites may prevent conifer establishment. Soil saturation and an impermeable layer of compacted till may prevent deep rooting of plant species without disking of soil.

Vegetative Succession at Griffin Creek South

Patches of coniferous forest along Griffin Creek South’s upper slope are the most mature onsite and will develop old-growth characteristics more rapidly than the mixed forests. Succession in the seep areas above Griffin Creek will be harder to predict, but may eventually become dominated by western red cedar and possibly Sitka spruce if those species are able to establish and remain rooted.

Wildlife

The Technical Appendix prepared for this site utilized data from the 1995 Weyerhaeuser Griffin-Tokul Watershed Analysis. Wildlife Habitat Corridors, as identified in the 1996 King County Comprehensive Plan are shown on the natural resources map for Griffin Creek North (*Figure 4a*). A list of fish and wildlife species observed on site (*Table 2*) supplements the following information.

Fish

Coho salmon, winter steelhead, and sea-run cutthroat trout are the most widely distributed anadromous fish in Griffin Creek. Adult steelhead can be seen spawning in the system from December through March. Resident coastal cutthroat trout are the most widely distributed salmonid in the drainage. Odd-year pink, fall chinook, and fall chum use the lowest mile of the creek, downstream of the Natural Area. All salmonid stocks but coho (thought to be of mixed heritage) are probably of native origin with wild production. Griffin Creek has the highest percentage of total coho escapement of all the Snohomish River sub-basins and compose an estimated 20 percent of total adult returns. Adult coho can be expected in the system as early as July and continue through the spawning season from November to January. Coho typically need small tributaries for rearing and the continued presence of this habitat type in Griffin Creek is of importance. During a 1997 stream survey on Griffin Creek North, coho fry were observed in the few pockets of quiet water in Griffin Creek and one coho fry was observed in its seasonal tributary. Numerous non-salmonid fish species are known or expected to occur in the watershed as well, including suckers, sculpins, lamprey, minnows, catfish, and sticklebacks.

Table 2. Wildlife Species Expected to Utilize Griffin Creek Park Natural Area*

SCIENTIFIC NAME	COMMON NAME	N	S	SCIENTIFIC NAME	COMMON NAME	N	S
MAMMALS				Pikas, Hares, and Rabbits (Lagomorpha)			
<u>Insect-eaters (Insectivora)</u>				<u>Leporidae</u>			
<i>Soricidae</i>				<i>Sylvilagus</i> spp.	Cottontail Rabbit	X	X
<i>Sorex bendirei</i>	Marsh Shrew			<i>Lepus americanus</i>	Snowshoe Hare		
<i>Sorex trowbridgei</i>	Trowbridge Shrew			<u>Even-hoofed Mammals (Artiodactyla)</u>			
<i>Sorex vagrans</i>	Vagrant Shrew			<u>Cervidae</u>			
<u>Talpidae</u>				<i>Cervus elaphus</i>	Elk		
<i>Scapanus townsendi</i>	Townsend's Mole			<i>Odocoileus hemionus</i>	Blacktail Deer	X	X
<u>Bats (Chiroptera)</u>				BIRDS			
<i>Lasiurus cinereus</i>	Hoary Bat			<u>Herons, Bitterns (Ardeidae)</u>			
<i>Myotis lucifugus</i>	Little Brown Myotis			<i>Ardea herodias</i>	Great Blue Heron		
<u>Pouched Mammals (Marsupialia)</u>				<u>Geese (Anserini)</u>			
<i>Didelphis marsupialis</i>	Opossum			<i>Branta canadensis</i>	Canada Goose		
<u>Flesh-eaters (Carnivora)</u>				<u>Ducks (Anatinae)</u>			
<u>Ursidae</u>				<i>Anas platyrhynchos</i>	Mallard		
<i>Ursus americanus</i>	Black Bear			<i>Histrionicus histrionicus</i>	Harlequin Duck		
<u>Procyonidae</u>				<i>Mergus mercanser</i>	Common Merganser		
<i>Procyon lotor</i>	Raccoon	X		<u>Hawks, etc. (Accipitridae)</u>			
<u>Mustelidae</u>				<i>Pandion haliaetus</i>	Osprey		
<i>Lutra canadensis</i>	River Otter			<i>Haliaeetus leucocephalus</i>	Bald Eagle		
<i>Martes americana</i>	Marten			<i>Accipiter striatus</i>	Sharp-shinned Hawk		
<i>Mustela erminea</i>	Short-tailed Weasel			<i>Accipiter cooperii</i>	Copper's Hawk		
<i>Mustela frenata</i>	Long-tailed Weasel			<i>Buteo jamaicensis</i>	Red-tailed Hawk	X	
<i>Mustela vison</i>	Mink			<u>Falcons (Falconidae)</u>			
<i>Mephitis mephitis</i>	Striped Skunk			<i>Falco sparverius</i>	American Kestrel		
<i>Spilogale putorius</i>	Spotted Skunk			<i>Falco columbarius</i>	Merlin		
<u>Canidae</u>				<u>Fowl-Like Birds (Phasianidae)</u>			
<i>Canis latrans</i>	Coyote		X	<i>Phasianus colchicus</i>	Ring-Necked Pheasant		
<u>Felidae</u>				<i>Bonasa umbellus</i>	Ruffed Grouse		
<i>Felis concolor</i>	Mountain Lion			<i>Callipepla californica</i>	California Quail		
<i>Felis rufus</i>	Bobcat			<u>Sandpipers, Phalaropes (Scolopacidae)</u>			
<u>Gnawing Mammals (Rodentia)</u>				<i>Tringa melanoleuca</i>	Greater Yellowlegs		
<u>Aplodontiidae</u>				<i>Tringa flavipes</i>	Lesser Yellowlegs		
<i>Aplodontia rufa</i>	Mountain Beaver			<i>Actitis hypoleucos</i>	Common Sandpiper		
<u>Sciuridae</u>				<i>Actitis macularia</i>	Spotted Sandpiper		
<i>Eutamias townsendi</i>	Townsend Chipmunk			<i>Calidris mauri</i>	Western Sandpiper		
<i>Glauconys sabrinus</i>	Northern Flying Squirrel			<i>Calidris alpina</i>	Dunlin		
<i>Tamiasciurus douglasi</i>	Douglas Squirrel			<i>Limnodromus griseus</i>	Short-billed Dowitcher		
<u>Castoridae</u>				<i>Limnodromus scolopaceus</i>	Long-billed Dowitcher		
<i>Castor canadensis</i>	Beaver			<i>Gallinago gallinago</i>	Common Snipe		
<u>Cricetidae</u>				<u>Jaeger, Gulls, etc. (Laridae)</u>			
<i>Peromyscus maniculatus</i>	Deer Mouse			<i>Larus glaucescens</i>	Glaucous-winged Gull		
<i>Peromyscus oreas</i>	Deer Mouse			<u>Pigeons, Doves (Columbidae)</u>			
<i>Clethrionomys gapperi</i>	Boreal Red Backed Vole			<i>Columba livia</i>	Rock Dove		
<i>Microtus oregoni</i>	Oregon Vole			<i>Columba fasciata</i>	Band-tailed Pigeon		
<i>Microtus longicaudus</i>	Long-tailed Meadow Vole			<u>Owls (Tytonidae, Strigidae)</u>			
<i>Microtus townsendii</i>	Townsend's Vole			<i>Otus kennicottii</i>	Western Screech-owl		
<i>Ondatra zibethica</i>	Muskrat			<i>Bubo virginianus</i>	Great Horned Owl		
<u>Muridae</u>				<i>Glaucidium gnoma</i>	Northern Pygmy Owl		
<i>Rattus norvegicus</i>	Norway Rat			<i>Strix varia</i>	Barred Owl		
				<i>Aegolius acadicus</i>	Northern Saw-whet Owl		
				<u>Swifts (Apodidae)</u>			
				<i>Chaetura vauxi</i>	Vaux's Swift		

Table 2. (cont.)

SCIENTIFIC NAME	COMMON NAME	N	S	SCIENTIFIC NAME	COMMON NAME	N	S
<u>Hummingbirds (Trochilidae)</u>				<i>Carduelis pinus</i>	Pine Siskin		
<i>Selasphorus rufus</i>	Rufous Hummingbird	X		<i>Carduelis tristis</i>	American Goldfinch		
<i>Calypte anna</i>	Anna's Hummingbird			<i>Coccothraustes vespertina</i>	Evening Grosbeak		
<u>Kingfishers (Alcedinidae)</u>				<u>Weaver Finches (Passeridae)</u>			
<i>Ceryle alcyon</i>	Belted Kingfisher			<i>Passer domesticus</i>	House Sparrow		
<u>Woodpeckers (Picidae)</u>							
<i>Sphyrapicus thyroides</i>	Red-breasted Sapsucker			FISH			
<i>Picoides pubescens</i>	Downy Woodpecker	X		<u>Salmons, Trouts, etc. (Salmonidae)</u>			
<i>Picoides villosus</i>	Hairy Woodpecker	X	X	<i>Oncorhynchus clarki</i>	Cutthroat Trout		X
<i>Drycopus pileatus</i>	Pileated Woodpecker	X	X	<i>Oncorhynchus kisutch</i>	Coho Salmon		X
<i>Colaptes auratus</i>	Northern Flicker			<i>Oncorhynchus mykiss</i>	Steelhead		X
<u>Flycatchers (Tyrannidae)</u>				<u>Sticklebacks (Gasterosteidae)</u>			
<i>Contopus borealis</i>	Olive-sided Flycatcher	X		<i>Gasterosteus aculeatus</i>	Three-spine Stickleback		
<i>Contopus sordidulus</i>	Western Wood Pewee			<u>Sculpin (Cottidae)</u>			
<i>Empidonax traillii</i>	Willow Flycatcher			<i>Cottus</i> sp.	Sculpin		
<i>Empidonax difficilis</i>	Pacific-slope Flycatcher						
<i>Empidonax hammondi</i>	Hammond's Flycatcher	X		AMPHIBIANS			
<i>Empidonax oberholseri</i>	Dusky Flycatcher			<u>Salamanders and Relatives</u>			
<u>Swallows (Hirundinidae)</u>				<u>Ambystomatidae</u>			
<i>Tachycineta bicolor</i>	Tree Swallow			<i>Ambystoma gracile</i>	Northwestern Salamander		
<i>Tachycineta thalassina</i>	Violet-green Swallow			<u>Dicamptodontidae</u>			
<i>Hirundo rustica</i>	Barn Swallow			<i>Dicamptodon ensatus</i>	Pacific Giant Salamander		
<u>Jays, Magpies, Crows (Corvidae)</u>				<u>Lungless Salamanders (Plethodontidae)</u>			
<i>Cuanoatta stelleri</i>	Steller's Jay	X	X	<i>Ensatina eschscholtzii</i>	Ensatina		
<i>Corvus brachyrhynchos</i>	American Crow			Frogs and Toads (Ascaphidae)			
<i>Corvus caurinus</i>	Northwestern Crow			<u>Tree Frogs and their Allies (Hylidae)</u>			
<i>Corvus corax</i>	Common Raven			<i>Hyla regilla</i>	Pacific Chorus Frog		X
<u>Chickadees, Titmice (Paridae)</u>				<u>True Frogs (Ranidae)</u>			
<i>Parvus atricapilus</i>	Black-capped Chickadee	X		<i>Rana aurora</i>	Red-legged Frog		X
<i>Parvus rufescens</i>	Chestnut-backed Chickadee						
<i>Parus gambeli</i>	Mountain Chickadee			REPTILES			
<u>Bushtit (Aegithalidae)</u>				<u>Colubrids (Colubridae)</u>			
<i>Psaltriparus minimus</i>	Bushtit			<i>Thamnophis elegans</i>	W. Terrestrial GarterSnake		
<u>Nuthatches (Sittidae)</u>				<i>Thamnophis ordinoides</i>	Northwestern GarterSnake		
<i>Sitta canadensis</i>	Red-breasted Nuthatch			<i>Thamnophis sirtalis</i>	Common Garter Snake		X
<u>Creepers (Certhiidae)</u>							
<i>Certhia americana</i>	Brown Creeper			INVERTEBRATES			
<u>Wrens (Troglodytidae)</u>				<i>unidentified species</i>	Freshwater Mussel		X
<i>Thryomanes bewickii</i>	Bewick's Wren						
<i>Troglodytes aedon</i>	House Wren						
<i>Troglodytes troglodytes</i>	Winter Wren	X	X				
<u>Dippers (Cinclidae)</u>							
<i>Cinclus mexicanus</i>	American Dipper						
<u>Blackbirds, Orioles, etc. (Icterinae)</u>							
<i>Molothrus ater</i>	Brown-headed Cowbird						
<i>Icterus galbula</i>	Northern Oriole						
<u>Finches (Fringillidae)</u>							
<i>Carpodacus purpureus</i>	Purple Finch						
<i>Carpodacus mexicanus</i>	House Finch						
<i>Loxia curvirostra</i>	Red Crossbill						

Notes:

*N, S Indicate "Griffin Creek North" and "Griffin Creek South".

X Indicates species observed on April-May 1997 site visits. The site is within species range of all other listed species.

Bold species name indicates non-native species.

Amphibians and Reptiles

Extensive amphibian and reptile surveys have not been performed in or near the Natural Area. However, a limited survey of Griffin Creek North in March of 1998 found native long-toed salamanders breeding in the open water ditch flowing out of the lower meadow wetland area, west of the SVT. A native Pacific tree frog (chorus frog) was also observed in this area, as well as numerous other aquatic organisms in small depressions of the floodplain. Red-legged and Pacific tree frogs were also observed here in 1997. It is likely that populations of these species also use this small, ditched tributary and wetland for breeding. Non-native, invasive bullfrogs require slow moving, year-round open water to complete their life cycles and therefore are not expected to occur here. Rock and slash piles offer ideal habitat for reptiles on site. Garter snakes were observed on slash piles at Griffin Creek South.

Aquatic Invertebrates

Surveys for aquatic invertebrates were not conducted in Griffin Creek. However, during a 1997 spring general stream survey, a native freshwater mussel shell was found in the vicinity of Griffin Creek North, indicating the likely presence of freshwater mussel beds upstream.

Birds

Both sites provide high quality habitat for a variety of resident and migratory bird species. Field observations of bird species were limited at Griffin Creek North, but black-capped chickadee, winter wren, golden-crowned kinglet, townsend (or hermit) warbler and hairy woodpecker were observed in late April 1997. Pileated woodpecker, Stellar's Jay, and red-tailed hawk were observed in February of 1998. Other neo-tropical migratory bird species such as flycatchers, warblers, and grosbeaks are expected to inhabit deciduous and coniferous forests on the site. A greater variety of bird species was observed in mixed forests at Griffin Creek South, visited later in the spring. Pacific Slope Flycatchers and olive-sided flycatchers were heard and rufous hummingbirds were observed along the lower slope feeding on salmonberry flowers. Pileated woodpecker, winter wren, Stellar's Jay and western tanager were observed in mixed forests on the upper portion of the property. Hairy woodpecker, American Robin, and rufous-sided towhee were heard or seen in the vicinity and are expected to use the site.

Mammals

Blacktail deer are commonly seen on Griffin Creek North and deer sign are observed throughout Griffin Creek South. Cottontail scat was observed on both sites. Raccoon tracks were common along the creek edge, and aquatic species such as beaver, river otter, muskrat, and mink most likely exist along Griffin Creek at both sites. Small mammals such as shrews, mice, voles, squirrels and weasels most likely inhabit both sites. Coyote scat was observed at Griffin Creek South and it is likely that they frequent the general area as well as mountain lion and possibly black bear.

LAND USE

Historic Use

Regional Cultural History

For millennia, the site at the confluence of the Tolt and Snoqualmie Rivers (north of the Griffin Creek Park Natural Area) was known by the name *Tolthue*, a Salish word meaning "River of Swift Waters". The site was the location of the main village of the Snoqualmie tribe. Known as the *People of the Moon*, this was the largest native tribe in the region. The *People* used the river as a highway, traveling up river as far as Snoqualmie Falls where they traded with Yakama and Klickitat people from east of the Cascades. They also used their waterways to reach tribes further west in the Puget Sound lowlands. Fishing was the primary attraction of this area, especially the abundant salmon. Wildlife such as deer, elk, beaver and numerous game bird species as well as roots, bulbs, berries and nuts would have provided ample food to the *People*. Despite this rich Native American history in the vicinity, there are no inventoried archaeological resources at the Griffin Creek Park Natural Area. Archaeological sites are more commonly found on river terraces than in floodplains and while Griffin Creek North contains terracing, the

majority of the site lies within the active floodplain which would make the survival of archaeological remains unlikely.

European settlement started in the Snoqualmie Valley in the late 1850s. Near the confluence of Patterson Creek and the Snoqualmie, less than a mile west of Griffin Creek North, a marker commemorates one of the early buildings, Fort Patterson. While there is no military record for this fort, there is written evidence that it was built in the style of Hudson Bay outposts. By the turn of the century, logging camps were set up throughout the area to exploit and log the thick forests covering much of the Snoqualmie Valley.

Development in the Valley

The Cherry Valley Lumber Company set up their headquarters at Stillwater, north of Carnation (then known as Tolt) and became a center for logging in the region. From 1900 until 1927 Cherry Valley, which later became a subsidiary of the Weyerhaeuser Corporation, established a logging camp adjacent to Griffin Creek North. Roughly 25,000 acres were logged by the company in the lower Snoqualmie Valley during this time. The lumber company made use of the rail line constructed by the Chicago, Milwaukee and St. Paul Railroad, which now forms the grade of the Snoqualmie Valley Trail. The SVT trestle over Griffin Creek was constructed by the railroad in 1911, and is now listed in the King County Historic Resources Inventory as one of the few such trestles remaining in King County today. The adjacent saw mill is now operated as the Davidson Family Sawmill.

As timber resources became depleted, the company moved on, having leased its camp to the federal government. A Civilian Conservation Corps (CCC) camp was built at the site in the early 30s by the state forestry department with Federal Works Progress Administration (WPA) funds. In 1935 this became a “transient” camp, where homeless men were taken to be clothed, fed and given jobs constructing public works. Into the late 30s the site served as “Camp Carnation” for the Washington State Department of Welfare and housed homeless single men. The leased property then reverted back to Weyerhaeuser during the war. By the 1950s timber interests largely moved away from the Snoqualmie area and the former camp was sold to the Catholic Archdiocese of Seattle in 1952 as a Catholic Youth Organization (CYO) summer camp, Camp Don Bosco. Additional parcels surrounding the original logging camp were purchased, including the 27-acre “Griffin Creek North” parcel which would contain the Camp’s corrals. This parcel was sold in 1997 to King County as part of the Waterways 2000 program. The remainder of the Camp serves as a summer camp and year-round retreat for youth.

The valley around the Griffin Creek Park Natural Area was once home to dozens of dairy farms which made use of the ideal agricultural soils of the floodplain. By the late 1990s, however, only two dairy farms were left in the area.

Current Use

The Griffin Creek basin is composed of approximately 12,000 acres and 20 river miles. Approximately 94 percent of land use in the basin is designated as forestry, much of which is commercial forest land owned by the Weyerhaeuser Corporation. A small percentage (approximately 6 percent) is in Rural use as mixed agricultural and residential. Residences and farms predominate in the first 2.25 miles of the creek’s run.

Current Use Patterns

Informal activities such as hiking, picnicking, and angling take place at the Natural Area. Full use of the Griffin Creek North site transferred to King County Parks at the end of 1997 when horses, corrals and fences were removed by Camp staff. Trampling of creek banks, littering, and social trail use have been minimized with the removal of the horses.

Parking

The existing parking area off of NE 11th Street continues to accommodate trail users as well as some Camp overflow parking.

Site Access

Griffin Creek North is easily accessed from the SVT, the gated access road off NE 11th Street, and East Griffin

Creek Road NE. Private properties to the south have fenced pastures which prevent horse access across Griffin Creek. The gated corral road provides the only vehicular access to the Natural Area. Bicycle and pedestrian-caused erosion on both sides of the SVT trestle bank alongside Griffin Creek continues in the absence of barriers to access.

The steeply sloped, forested and wetland parcels comprising Griffin Creek South are difficult to access. All parcels are accessed via a recorded, but undeveloped easement road. Location of both the properties and the easement are currently unidentifiable without survey and signage. East Griffin Creek Road NE abuts the parcel on the north bank of Griffin Creek.

Part III - SITE MANAGEMENT RECOMMENDATIONS

Land Use Classification/Park Use Areas

Parks and open spaces in the King County Park system are classified according to a three-level system. The first level distinguishes sites as local or regional, the second level specifies the site's primary purpose (natural area, active recreation, passive recreation, multi-use, trail or special purpose), and the third defines park use areas within the site (natural areas, active recreation areas, passive recreation areas, staging areas, and special management areas). Due to the nature of the site and purpose and goals of the Waterways 2000 program, the Griffin Creek site is classified as a *Natural Area of local significance*, with *natural areas*, *passive recreation areas*, and *special management areas* within its boundaries. *Natural Areas* support little development and limited public access, with access via footpaths and interpretive and directional signage as necessary. *Passive recreation areas* allow for informal activities such as interpretive programs and passive water access. At this site, *special management areas* would be limited to habitat protection, which discourages public access. *Staging areas* for limited parking and restrooms are located within the Natural Area. Park use areas onsite are generally described as follows:

Natural areas: The entire site, excluding the passive recreation areas, special management areas and staging areas.

Passive Recreation Areas: Upper meadow picnic area and eastern meadow footpath/view area to the east of SVT.

Special Management Areas: The remainder of the site, including protected sensitive areas and their buffers (Griffin Creek, wetlands, and perennial tributaries).

Staging areas: Parking at gravel lot on NE 11th Street. Restrooms (4-stall outhouse) and water source at upper meadow picnic area.

Using these classifications, planning and design recommendations are detailed in the following pages. General elements are noted on the site management map (*Figure 5*).

Planning Elements and Recommendations

Site Uses

The preservation, protection, and enhancement of fish and wildlife habitat onsite is the primary objective in planning for the Natural Area. The provision of appropriate, low-impact public access is the secondary objective. Following are recommended public uses for the Natural Area:

- Nature observation
- Picnicking (day-use pedestrian, bicycle and equestrian access *at upper meadow area only*)
- Creekside viewing area (day-use, limited pedestrian access *at eastern meadow area only*)
- Nature interpretation and education

- Photography
- Restroom facility (day-use pedestrian, bicycle and equestrian access *at upper meadow area only*)
- Interpretive programming (wetlands and wildlife)

Separation of Uses

In order to conserve resources at the Natural Area and to provide limited public use of the site, emphasis should be placed on redirecting uses and minimizing impacts to the upper meadow and eastern meadow areas and discouraging access to the rest of the site.

Special Management Areas

Habitat Preservation Areas

The site's most sensitive areas are located in the lowest terraces along Griffin Creek and its riparian zones. Public access to these areas should be discouraged. The following general design and planning elements are recommended for the most sensitive portions of the Natural Area:

- Limit access to the lowest terraces and riparian areas of Griffin Creek by removing and revegetating social trails as feasible and not maintaining or constructing additional trails.
- Do not introduce new footpaths or structures to areas that currently see little human use.
- Restore areas damaged by informal uses.
- Maintain and enhance the condition of wetland and riparian buffers onsite.
- Comply with all regulations and restrictions which may result from ESA listings of salmonids in the management of the Natural Area.

Passive Recreation Areas

Although this Natural Area was purchased for its conservation significance, it also offers passive recreational and educational opportunities. Appropriately directed public access and appreciation of the resources will be important for future conservation efforts and site stewardship. The size and scope of current public use should be reduced at most portions of the site, discouraging access to wetland and riparian zones, and allowing reconfigured access to portions of the upper and eastern meadows. The passive recreation area at the upper meadow could provide picnic tables, interpretive signage, and water as well as restroom facilities. The remainder of the upper meadow and eastern meadow could contain footpaths or directional signage but little other use. No access should be encouraged in the habitat preservation area of the lower meadow. Design issues include picnic area furnishings, trail/footpath location and extent, and interpretive sign locations.

Internal trails and water access

This site is popular with the public and because of its location adjacent to the SVT and Camp Don Bosco, it will continue to attract visitors. Minimizing and redirecting the impact of public use is the intent of providing site improvements. Low-impact, pedestrian only footpaths improved/rerouted in sections could allow for limited public access. The upper meadow picnic area, which experienced the heaviest use with its corrals and riding rings, is the most logical location to redirect public use, away from the sensitive wetland and riparian areas of the lower meadow. No direct water access is recommended. Outside of the upper meadow picnic area road, pedestrian-only footpaths are the only type of trail recommended. Following is a list of trails/footpaths recommended for the site (*Figure 5*):

- Existing trail from SVT to eastern meadow—improved and maintained as a footpath (accounting for slopes in the redesign) to provide a view access to Griffin Creek.

[insert Fig. 5]

- Existing upper meadow access road—remove existing gate at entrance and replace with barriers/drop bollards (suitable for KC Parks vehicular access) to provide equestrian, pedestrian and non-motorized access to picnic area.
- Remainder of road to the riparian zone should be removed and replanted with native species.
- Existing trail from SVT to picnic area—reroute and maintain as pedestrian-only footpath.

Viewing Areas

In order to prevent continued public access to riparian zones, view-only areas are recommended. Following are recommended view spots:

- View spot on the SVT trestle, offering a direct aerial view of the creek and a large portion of the Natural Area. This is a good location for viewing salmon in the creek, wildlife at the Natural Area, and has minimal impact to creek and wildlife.
- Small view area near Griffin Creek in the eastern meadow. Direct creek access could be discouraged with plantings and signage. Remainder of meadow should be the focus of restoration projects.

Interpretation

Interpretive opportunities could highlight the importance of the site's natural and cultural history, as well as its fish and wildlife habitat. Impacts of upstream commercial forest harvest on future onsite restoration goals could be explained. Design and installation of interpretive signs will be to KC Parks interpretive standards. Following are potential interpretive locations at the Natural Area:

- SVT trestle—interpretive sign near existing Waterways 2000 sign above Griffin Creek
- Upper meadow—signage could focus on restoration activities and stream morphology.

Parking

- Improve existing parking area along NE 11th Street parking lot and regrade with crushed rock. Clearly demarcate boundaries with log barriers or fencing, if feasible, to continue visual consistency.
- The parking lot will continue to serve Camp Don Bosco camper pick-up/drop off and overflow parking *“for no more than 15 days per summer and for overflow parking of approximately 10 cars on no more than 15 occasions per year lasting two days on the weekends”* as outlined in the property’s purchase and sale agreement. It will also provide parking for SVT trail users and Natural Area visitors.

Restroom

- Improve existing four-stall, 750-gallon concrete-lined vault toilet in order to serve SVT trail users and picnic area. Install concrete apron around periphery, repair damaged doors and make other repairs as necessary. The structure is not ADA accessible
- Install metered line from Camp Don Bosco’s adjacent city (Carnation) water line.

Site-wide Issues

Revegetation/Habitat restoration

The protection of instream, riparian and terrestrial habitat features will be critical to continued salmonid habitat function. Restoration of currently degraded habitat will also be a component of this protection. Onsite, Griffin Creek flows in a relatively straight channel with few instream habitat features. Increasing instream diversity along this reach could include adding LWD to the stream channel, reconnecting the creek to floodplain areas to form lateral wetlands and sediment/debris deposition areas, as well as redirecting the creek through old floodplain pastures upstream of the SVT. Restoring the connection between the creek and its small seasonal tributary could also improve fish habitat.

Planting conifers in the understory could encourage progression towards a more conifer-dominated environment that would provide shade and a source of nutrients to the stream. Reestablishment of a coniferous understory to the creek and riparian areas coupled with invasive species removal could prevent the spread of invasives and provide a long-term healthy cover on the site. Stream and riparian buffers restored to maximum widths could increase the long-term habitat value for fish and wildlife. Expansion of protected waterways and systems will likely occur as a result of ESA listings, and potentially increase the habitat protected within the vicinity of this Natural Area and other Snoqualmie basin lands.

Potential projects would need to be thoroughly assessed in relation to likely effects on neighboring properties and existing structures (such as the SVT and trestle) before being approved by KC Parks. The lowest pasture areas lie within the active floodplain of Griffin Creek and therefore restoration projects should also take into account potential flooding, gravel movement, and seasonal inundation of replanted areas. Surveys for amphibians would also need to be conducted before any modification of system hydrology were planned or implemented, as the seasonal tributary onsite is used by native amphibians for breeding and juvenile coho for rearing during the spring. Hydrological modeling of Griffin Creek under different land use scenarios upstream of the northern site would also need to be completed prior to approval of any such project.

An important aspect of long-term management at the Natural Area will be the condition of the watershed upstream (in private commercial timber production) which will impact the site, despite restoration activities. The road network, harvest frequency, and extent of harvest on timberlands will continue to have a direct relationship to runoff characteristics from storm events, affecting sediment delivery and flooding frequency of Griffin Creek.

Given these considerations, the following are recommendations for restoration onsite:

- Retire and replant existing camping area adjacent to SVT with native trees and shrubs subsequent to establishment of picnic area in the upper meadow.
- Retire and replant social trails to creek and through riparian and wetland areas with native conifers and shrubs.
- Enhance riparian buffer (east and west of SVT) to minimum of 150-feet along creek with native conifers and shrubs. Remove existing invasive plant species in conjunction with buffer restoration. Disk compacted topsoil if necessary.
- Enhance natural succession in forested areas with conifer and native shrub underplantings.
- Control current and future infestations of non-native and invasive plant species, utilizing existing KC Parks/KC DNR monitoring and removal programs. Monitor access corridors (trails, roads) and creek for weed establishment and remove as feasible (see *Appendix*). Short-term priority for removal should be along the western meadow boundary in order to improve the survival rate of trees planted there in Fall 1997.
- As an aspect of restoration projects, monitor the survival of restoration plantings and provide necessary maintenance, watering and replacement.

Boundary Delineation—Survey/Signage/Fencing

Survey and posting of the site was completed in 1998. To assist in long-term monitoring of general site conditions, the following elements are recommended:

- Install additional fencing or appropriate barriers along north sides of SVT trestle to prevent further access to creek from slope. Remove and revegetate existing trails dropping to Griffin Creek from either side of SVT trestle.
- Maintain wooden fence separating upper and lower pasture areas to prevent access to lower riparian zone. Secure or replace gate.
- Rectify existing encroachment along northern (parking area) boundary.
- Install KC Parks signs at appropriate access points.

- Install KC Parks signs to identify and direct use to upper and eastern meadow areas and to discourage access elsewhere.
- Monitor development activity near Griffin Creek South. West Griffin Creek Rd. NE could be extended and the easement road developed, at which time the parcels would become more accessible. Survey was completed here in 1998.

Maintenance/Staffing

Following are maintenance issues at the Natural Area:

- Budget for appropriate Parks maintenance staff to ensure that footpaths, picnic area, gates, fencing, restrooms, and access road are maintained, garbage is collected, and general property condition is monitored (including periodic bridge and trestle inspection). Picnic area maintenance will include infrequent mowing (and selective cutting and planting) of upper meadow surrounding picnic area to control weeds.
- Establish community volunteer stewardship in the maintenance and monitoring of the site.
- No herbicides, native plant removal, or removal of downed trees (unless they impact maintained footpaths) anywhere on site.
- Remove and dispose of barbed wire from selected locations as necessary for site safety.
- Maintain pedestrian-only footpaths to KC Parks standards.
- Maintain gravel parking area to KC Parks standards.
- Monitor for the occurrence of social trails, structures, and related activities throughout the site, particularly in sensitive areas. Remove social trails and structures as they are built and revegetate as necessary.

Park Furnishings

Park furnishings will be limited at the Natural Area, as distinct from a more traditional park. Only improvements which serve to preserve and protect natural resources onsite and minimize the impact of public use will be considered. Furnishings recommended are as follows:

- Install (2 - 3) picnic tables at upper meadow, developing picnic area to a rustic standard.
- Post area as pedestrian / equestrian day use only, no fires. With native tree and shrub plantings, limit public access to meadow beyond picnic area.
- Install secured KC Parks trash receptacle at parking and picnic area.
- Install meter on water line adjacent to SVT in cooperation with Camp Don Bosco.
- Install control device on hand pump in upper meadow to prevent waste of water.

Site Safety

- Discourage uses causing unsafe site conditions such as eroding banks and access to wetland areas.
- Post signs stating no direct creek access.
- Work with neighbors to report all unwanted activities to the local authorities.

Recommended Studies

To monitor the long-term health of the Natural Area over time, the following studies are recommended, as feasible:

- Conduct fishery habitat feasibility study of existing stream (roughly 2000 linear feet) using KC DNR programs in order to assess feasibility of stream channel and habitat improvement projects. Projects may involve LWD placement in creek, reestablishment of pools and side channels, and connection of Griffin Creek to floodplain.
- Conduct amphibian study in wetland and riparian areas. Utilize existing KC Parks/ KC DNR programs in order to evaluate the benefit of improved creek/wetland connection projects.
- Annually monitor site for water quality, wildlife habitation, invasive species, and performance of installed trees and shrubs. Coordinate with KC DNR to assess reasonable cost and extent of onsite long-term

information collection. Use existing KC DNR monitoring projects for long-term collection of resource data on fish, amphibians, native plants, and other wildlife species.

- Coordinate with existing KC Parks/KC DNR programs to create a consistent data collection and training program in order to develop, track and interpret long-term, volunteer data collection onsite. Projects should supplement existing site information with monitoring for: amphibian species, rare plants, invasive plants, and litter/dumping and detail the necessary frequency of such monitoring.
- Review Natural Area management annually or as necessary for needed actions or responses to conditions that may affect the site's functions, including changes in adjacent land use and increased public use onsite.
- Periodically monitor activities near Griffin Creek South, particularly future development of adjacent Weyerhaeuser lands as well as building and/or road extension along Griffin Creek.

Community Development

- Establish cooperation with neighbors, local landowners, civic and environmental organizations, as well as local schools. Continue dialogue with neighbors and Weyerhaeuser regarding upstream commercial forest harvest and restoration activities onsite. Utilize a variety of programs, such as KC Parks' "Adopt-a-Park" or KC DNR's "Habitat Partners" to encourage and manage volunteer stewardship efforts.
- Organize events to remove priority invasive species and plant native species in riparian zone buffers and other selected areas of the property. Other projects could include litter collection and amphibian monitoring.
- Develop long-term stewardship/educational projects with Camp Don Bosco which could include replanting native trees and shrubs in buffer zones, assisting with continuous invasive species removal, as well as monitoring and maintaining plantings.

Future Acquisitions

The Griffin Creek Park Natural Area is an important component of the larger Snoqualmie River System. Continuing the Waterways 2000 process of working with neighboring property owners and utilizing a variety of tools, including fee simple acquisition, purchase of conservation easements, enrollment in the current use taxation programs (PBRS) could add buffers to the Natural Area and improve linkages to other conservation and open space lands. Identifying habitat quality of areas upstream and downstream as well as their level of threat could be used to prioritize future acquisitions which could help to offset the negative effects of commercial timber harvesting upstream and development activities in the watershed. For example, acquisition of additional Camp Don Bosco property could expand protection of the forested habitat surrounding the Natural Area. Purchase and development of the Camp as a KC Parks educational facility could promote stewardship and protection of the site's natural resources and character.

Phasing and Priorities

The phasing plan establishes priorities for management activities at the Natural Area. Prioritization is based on providing for public safety and resource protection during implementation and reflect items of short-term (primary) and long-term (secondary) importance. Implementation of recommendations will be funded by annual King County Parks Capital Improvement (CIP) funds, DNR funds, and other applicable funding mechanisms. Parks' capital improvements compete countywide for funding during the annual budget adoption process; therefore in any given year, priority actions may not be funded due to more urgent projects. Implementation of work will be managed by DCFM as the implementing agency for KC Parks. Other entities such as WLRD would manage stream restoration and smaller projects subject to permit authority by KC Parks. Implementation will be accomplished by either outside contractors, in-house (KC) crews, or by maintenance and/or operational crews and volunteers.

Primary Priority

- **Upper meadow** improvements including furnishings/picnic tables, metered water line, trash receptacles, trail reconfiguration, signage, and repair of vault toilets

- **Parking area** improvements including surface regrading if necessary, gravel, log barriers, signage and trash receptacles
- Safety signage at NE 11th Street parking area and SVT trail crossing
- **Lower meadow** improvements including road removal and revegetation, gate repair/replacement
- **Riparian buffer** enhancement along Griffin Creek
- **Eastern meadow** improvements including reconfigured footpath, barriers, and fencing/barriers/vegetation along sides of SVT trestle
- **Eastern meadow** enhancement

Secondary Priority

- **Interpretive signage** (3) at appropriate locations
- Social trail/degraded area retirement and enhancement with native conifer/shrub underplantings
- Forested area enhancement with native conifer/shrub underplantings



Estimated Costs of Parks Capital Improvement Projects

<u>CONSULTANT DESIGN - 001</u>		
Basic A/E Fee	(12% of MACC)	\$6,925
Environmental Checklist		\$2,500
Grading Permit/SWM Drainage Review		\$5,000
Biological Assessment		\$12,500
Consultant Selection Advertisement Costs		\$1,500
Other Design		\$2,000
Total 001 - Consultant Design Cost		\$30,425
<u>CONSTRUCTION - 003</u>		
<u>Primary Priority</u>		
Upper Meadow improvements		\$10,500
Parking area improvements		\$5,720
Signage		\$300
Lower Meadow area enhancement		\$1,500
Riparian Buffer enhancement		\$6,500
Eastern Meadow enhancement		\$6,870
<u>Secondary Priority</u>		
Interpretive Signage		\$9,000
Trail Retirement/ Vegetation enhancement		\$4,000
	INFLATION (5.00%)	\$2,220
	DESIGN CONTINGENCY (10.00%)	\$4,439
	CONTRACTOR OVERHEAD & PROFIT (15.00%)	\$6,659
	MAX. ALLOWABLE CONST. COST (MACC)	\$57,707
	Sales Tax (8.60% of MACC)	\$4,963
	Building Permit Fees (2.00% of MACC)	\$1,154
	Printing Cost (Bid Documents)	\$2,000
Total 003 - Construction Cost		\$65,824
<u>EQUIPMENT & FURNISHINGS - 004</u>		
Total 004 - Equipment & Furnish. Cost		N/A
<u>CONTINGENCY - 005</u>		
Project Contingency	10.00% (of 001, 003, 004,007, 009)	
Total 005 - Contingency Cost		\$11,415
<u>COUNTY FORCE DESIGN - 007</u>		
Other		\$1,000
Total 007 - County Force Design Cost		\$1,000
<u>COUNTY FORCE ADMINISTRATION - 009</u>		
Facilities Management Admin.	(260 hours)	
Total 009 - County Force Admin. Cost		\$16,900
<u>ART - 006</u>		
006 (1% of 001,003,005,007 & 009)		
Total 006 - Art Cost		\$1,256
TOTAL PROJECT COST		\$126,819

Part IV - Appendix

Table 3: Priority Invasive Plant Species at Griffin Creek Natural Area

SCIENTIFIC NAME	COMMON NAME
<i>Hedera helix</i>	English Ivy
<i>Iris pseudocorus</i>	Yellow Iris
<i>Phalaris arundinacea</i>	Reed Canarygrass
<i>Polygonum cuspidatum</i>	Japanese Knotweed
<i>Rubus discolor</i>	Himalayan Blackberry
<i>Rubus laciniatus</i>	Evergreen Blackberry
<i>Solanum dulcamara</i>	Bittersweet Nightshade

Table 4: 1996 Washington State Noxious Weed List/Class A Weeds
Control is mandatory statewide.

SCIENTIFIC NAME	COMMON NAME
<i>Abutilon theophrasti</i>	Velvetleaf
<i>Carduus pycnocephalus</i>	Italian Thistle
<i>Carduus tenuiflorus</i>	Slenderflower Thistle
<i>Centaurea calcitrapa</i>	Purple Starthistle
<i>Centaurea macrocephala</i>	Bighead Knapweed
<i>Centaurea nigrescens</i>	Vochin Knapweed
<i>Crupina vulgaris</i>	Common Crupina
<i>Helianthus ciliaris</i>	Texas Blueweed
<i>Heracleum mantegazzianum</i>	Giant Hogweed
<i>Hibiscus trionum</i>	Venice Mallow
<i>Hieracium pilosella</i>	Mouseear Hawkweed
<i>Hydrilla verticillata</i>	Hydrilla
<i>Isatis tinctoria</i>	Dyers Woad
<i>Mirabilis nyctaginea</i>	Wild Four O'clock
<i>Peganum harmala</i>	Peganum
<i>Proboscidea louisianica</i>	Unicorn-plant
<i>Salvia aethiopsis</i>	Mediterranean Sage
<i>Silybum marianum</i>	Milk Thistle
<i>Solanum elaeagnifolium</i>	Silverleaf Nightshade
<i>Solanum rostratum</i>	Buffalobur
<i>Sorghum halepense</i>	Johnsongrass
<i>Spartina patens</i>	Salt Meadow Cordgrass
<i>Zygophyllum fabago</i>	Syrlan Bean-caper

Table 5: 1996 Washington State Noxious Weed List/Class B Weeds

Control is mandatory in all or parts of King County.	
SCIENTIFIC NAME	COMMON NAME
<i>Acroptilon repens</i>	Russian Knapweed
<i>Alhagi maurorum</i>	Camelthorn
<i>Amorpha fruticosa</i>	Indigobush
<i>Anchusa arvensis</i>	Annual Bugloss
<i>Anchusa officinalis</i>	Common Bugloss
<i>Cabomba caroliniana</i>	Fanwort
<i>Carduus acanthoides, C. nutans</i>	Plumeless and Musk Thistle
<i>Centaurea biebersteinii, C. diffusa, C. jacea, C. nigra, C. jacea x nigra</i>	Spotted, Diffuse, Brown, Black, & Meadow Knapweed
<i>Cenchrus longispinus</i>	Longspine Sandbur
<i>Centaurea solstitialis</i>	Yellow Starthistle
<i>Chondrilla juncea</i>	Rush Skeletonweed
<i>Cyperus esculentus</i>	Yellow Nutsedge
<i>Echium vulgare</i>	Blueweed
<i>Euphorbia esula</i>	Leafy Spurge
<i>Hieracium caespitosum</i>	Yellow Hawkweed
<i>Lamium hybridum</i>	Hybrid Deadnettle
<i>Lepidium latifolium</i>	Perennial Pepperweed
<i>Lepyrodiclis holosteoides</i>	Lepyrodiclis
<i>Linaria dalmatica ssp. dalmatica</i>	Dalmatian Toadflax
<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Myriophyllum aquaticum</i>	Parrotfeather
<i>Onopordum acanthium</i>	Scotch Thistle
<i>Picris hieracioides</i>	Hawkweed Oxtongue
<i>Potentilla recta</i>	Sulfur Cinquefoil
<i>Rorippa austriaca</i>	Austrian Fieldcress
<i>Senecio jacobaea</i>	Tansy Ragwort
<i>Sonchus arvensis spp. arvensis</i>	Perennial Sowthistle
<i>Spartina alterniflora, S. anglica</i>	Smooth, Common Cordgrass
<i>Sphaerophysa salsula</i>	Swainsonpea
<i>Torilis arvensis</i>	Hedgeparsley
<i>Tribulus terrestris</i>	Puncturevine
<i>Ulex europaeus</i>	Orse

Table 6: 1997 Washington State Noxious Weed List/Class C Weeds Control and containment strongly encouraged.

SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME	COMMON NAME
<i>Aegilops cylindrica</i>	Jointed Goatgrass	<i>Hyoscyamus niger</i>	Black Henbane
<i>Anthriscus sylvestris</i>	Wild Chervil	<i>Hypericum perforatum</i>	Common St. Johnswort
<i>Artemisia absinthium</i>	Absinth Wormwood	<i>Linaria vulgaris</i>	Yellow Toadflax
<i>Cardaria pubescens</i>	Hairy Whitetop	<i>Matricaria perforata</i>	Scentless Mayweed
<i>Chaenorrhinum minus</i>	Dwarf Snapdragon	<i>Phalaris arundinacea</i>	Reed Canarygrass
<i>Cirsium arvense</i>	Canada Thistle	<i>Polygonum cuspidatum</i>	Japanese Knotweed
<i>Cirsium vulgare</i>	Bull Thistle	<i>Secale cereale</i>	Cereal Rye
<i>Conium maculatum</i>	Poison-hemlock	<i>Silene latifolia ssp. alba</i>	White Cockle
<i>Convolvulus arvensis</i>	Field Bindweed	<i>Xanthium spinosum</i>	Spiny Cocklebur
<i>Cuscuta approximata</i>	Soothseed Alfalfa Dodder	<i>Cardaria draba</i>	Hoary Cress
<i>Cynoglossum officinale</i>	Houndstongue	<i>Tanacetum vulgare</i>	Common Tansy
<i>Daucus carota</i>	Wild Carrot	<i>Solanum dulcamara</i>	Bitter Nightshade
<i>Eruca vesicaria ssp. sativa</i>	Garden Rocket	<i>Tamarix spp.</i>	Saltcedar
<i>Gypsophila paniculata</i>	Babysbreath	<i>Verbascum thapsus</i>	Common Mullein

