

# Lower Peterson Creek Corridor Natural Area Site Management Guidelines

*October 2004*



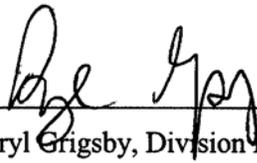
**King County**

Department of Natural Resources and Parks

**Water and Land Resources Division**

# Lower Peterson Creek Corridor Natural Area Site Management Guidelines

*October 2004*



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Daryl Grigsby, Division Director

King County Water and Land Resources Division



## **King County**

Department of Natural Resources and Parks  
Water and Land Resources Division

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# Lower Peterson Creek Corridor Natural Area Site Management Guidelines

## Summary

### Site Description

Lower Peterson Creek Corridor Natural Area is a King County Department of Natural Resources and Parks (DNRP) Ecological Land. Ecological Lands are managed for the protection of their ecological value, with appropriate public access.

The Natural Area consists of three parcels (70 acres) owned in fee by King County. The site is approximately 3/4 miles north of Maple Valley's Urban Growth Boundary and the SR 18/SR 169 interchange. The property is located between SE Petrovitsky Road/SE Pipeline Road on the west and the Cedar River on the east.

The Natural Area contains the lower 1/2 mile of Peterson Creek, including its confluence with the Cedar River at River Mile 14 on the left bank. The land along the stream corridor and above the Cedar River is extremely steep, the slopes designated as landslide hazard areas. The remainder of the site is rolling upland plateau about 200 feet in elevation above the Cedar River.

The slopes down to Lower Peterson Creek support dense mature coniferous forest, with a low understory of native vegetation. This stream corridor is noted in the Cedar River Basin Action Plan for high quality habitat conditions, for its forests in the late seral stage nearing old growth in structure and function, and for landsliding that delivers sediments and large woody debris to channel. The slopes above the Cedar River are so steep as to be unvegetated in many parts, the soil exposed and clearly visible as sandy bluffs when viewed from SR 169 to the east across the valley floor.

The upland parts of the site have been fairly recently harvested of coniferous trees, apparently with little replanting to restore conifer growth. Conifer plantings were performed in certain areas upon acquisition. Vegetation is primarily tall shrubs with occasional coniferous trees and older deciduous trees that were not harvested. Non-native blackberry is fairly widespread throughout this upland area.

### Public Use

Informal trails that were former roads provide pedestrian access to the upland portions of the site. The steep slopes and dense vegetation limit access on the steep portions of the site surrounding Peterson Creek and the Cedar River. It is appropriate to have pedestrian use directed to flat upland portions of the site rather than the steep forested slopes above Peterson Creek and the Cedar River (due to erosion potential,, significant contribution of these forested slopes to water quality and fish and wildlife habitat of these two water bodies, and the hazards of walking these extremely steep slopes). The property does not have an established parking area and is currently primarily used by local residents.

### Management Objectives and Recommendations

The goals for all King County Ecological Lands are to conserve and enhance ecological value, and accommodate appropriate public use that does not harm the ecological resources on site. The following are management recommendations that are designed to support these goals. Text follows each recommendation explaining how that recommendation applies at the site.

#### Objective: Maintain ecological integrity of the site

##### **Recommendation: Ensure that management and public access support the regional ecological value of site**

Decisions about site management and public access should consider the ecological role of, in particular, the steep slopes above Peterson Creek and the Cedar River, and the mature second-growth forest habitat along the Peterson Creek Corridor, and should preserve and protect ecological integrity of this area in particular. Public use at the site

may be more appropriately directed to the upland areas in the south and west of the site on the informal trails that follow old roads. This overarching recommendation is carried out through the various recommendations below.

**Objective: Develop long term ecologically based protection and restoration actions**

**Recommendation: Perform baseline inventories and assessments**

Complete baseline inventories and assessment of basic ecological conditions and physical processes. Staff with appropriate expertise (e.g., ecologists, biologists, and engineers) should perform this work. Existing documents, studies, and staff research may contribute substantial inventory and assessment information about the sites.

**Recommendation: Develop recommendations for site restoration from inventory information**

Use inventory and assessment information to develop projects to achieve a set of goals and objectives consistent with those identified for King County Ecological Lands. As projects on the Natural Area are prioritized and funded by King County agencies outside of the Natural Resource Lands group (or by other implementing agencies), projects should be reviewed by NRL through the “Application to Alter Parks Division and NRL Managed Properties” process to coordinate site management with project work.

**Objective: Contain the spread of invasive vegetation**

**Recommendation: Monitor and control invasive vegetation**

When staff and budget allow, King County Park staff should control the spread of invasive vegetation, where it is feasible to maintain and monitor over time. Extensive presence of blackberry throughout the upland portions of the site makes it a low priority for control (unless ongoing funding and maintenance is assured).

**Objective: Allow current level of passive recreation at the site**

**Recommendation: Monitor public access**

Public use is fairly low at this time, consisting of walking on informal trails in the upland portions of the site. Park staff should note changes in visitor numbers and types of recreational activities and observe any noticeable visitor impacts on the ecological values of the site. This information should be reported annually to King County Natural Resource Lands Management Staff responsible for updating site management guidelines.

**Objective: Protect the site from inappropriate public uses**

**Recommendation: Control litter/dumping and inappropriate activities**

Park staff should monitor the site for dumping, trash, or inappropriate uses, and respond as necessary to maintain a clean and safe property. Monitoring should occur at least monthly at the entrance gate and main road into site, and at a lower frequency for other areas of the property. The limited amount of dumped material currently at the site should be removed.

**Recommendation: Survey boundaries to determine whether encroachment has occurred**

Surveys of the southeast side of Lower Peterson-9014 and the northwest side of Lower Peterson-9151 should indicate whether neighboring properties have encroached on the site. Depending on the type and extent of encroachment, resolve situation with neighboring property owner.

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# Acknowledgements

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# Lower Peterson Creek Corridor Natural Area Site Management Guidelines

## Introduction

Lower Peterson Creek Corridor Natural Area is a King County Department of Natural Resources and Parks (DNRP) Ecological Land. Ecological Lands are a category of Water and Land Resources Division (WLRD) properties managed for the protection of their ecological value. Appropriate public access and interpretive opportunities are accommodated on these sites where they do not harm the ecological value of the site.

This document provides general property and acquisition information, a description of existing site conditions, a chronology of recent events and management actions, and a list of management objectives and recommendations for Lower Peterson Creek Corridor Natural Area. These site management guidelines were developed using guidance established in the King County Water and Land Resources Division Ecological Lands Handbook (King County 2003).

## Part 1. General Property Information

Lower Peterson Creek Corridor Natural Area is 70 acres in size and consists of 3 parcels. The site is approximately 3/4 miles north of Maple Valley's Urban Growth Boundary and the SR 18/SR 169 interchange. The Seattle Public Utilities' Lake Youngs supply lines and SE Pipeline Road run along the southwestern boundary of the site, adjacent to SE Petrovitsky Road and 220<sup>th</sup> Ave SE. The Cedar River forms the eastern boundary of the site. The site extends between residences at 21530 220<sup>th</sup> Ave SE to the south and 21134 SE Petrovitsky Road to the northwest. The site is located on the left bank of the Cedar in the vicinity of River Mile 14.<sup>1</sup>

See Figure 1 for a vicinity map and Figure 2 for a site map depicting parcel numbers. Table 1 provides general information about the location of the Natural Area. Table 2 provides specific information for each parcel in the Natural Area.

**Table 1. Lower Peterson Creek Corridor Natural Area General Information.**

Best Available Address	East of SE Petrovitsky Road, approximately in the 21200 block
Thomas Guide Map Location	p. 687 H5 and J5
Legal Description	Section 9, Township 22N, Range 6E
Acreage	70.08 Acres
Drainage Basin	Lower Cedar River/Peterson Creek
WRIA	8
Council District	12
King County Sensitive Areas	Stream, landslide, seismic, erosion, FEMA 100-year floodplain, floodway

**Table 2. Lower Peterson Creek Corridor Natural Area Parcel Information.**

Parcel Number	Name Used in Document <sup>2</sup>	Acreage *	Purchase Date	Ownership type/price	Previous Names	Zoning	Funding Source	Recording Number
0922069014	Lower Peterson-9014	27.72	2/11/00	Owned in Fee; \$700,000 for both	Kahne	RA 10	CFT	2000031 5001600
0922069152	Lower Peterson-9152	22.21			Kahne	RA 5		
0922069151	Lower Peterson-9153	20.15	10/11/01	Owned in Fee; \$340,000	Kahne	RA 5	SWM, REET, CFT	2001101 1000415

\*acreage from King County Assessor's data; date and funding source from Holecek 4/21/04 email.

<sup>1</sup> River miles depicted in the Lower Cedar River Basin and Nonpoint Pollution Action Plan (WMC 1998) are used in this report; actual river miles may be somewhat different due to improved technology in measurements.

<sup>2</sup> Parcels are referred to by the site name plus the last four digits of the ten-digit parcel number.

Most properties in this vicinity are zoned at 1 home per 5 acres; many sites are larger than 5 acres and are relatively undeveloped with a high percentage of second growth forest cover. The easternmost Natural Area property and adjacent private properties to the east across the Cedar River are zoned 1 home per 10 acres.

The King County Peterson Lake<sup>3</sup> Natural Area is located approximately 2/3 mile upstream along Peterson Creek. Additional public lands and recreation facilities nearby include several King County multi-use parks within 1 to 4 miles to the northwest: 400-acre Spring Lake/Lake Desire Park, 400-acre McGarvey Park, and 90-acre Petrovitsky Park. The City of Seattle's Lake Youngs Reservoir 2 miles to the west has no public access within the site, but a perimeter trail provides recreation opportunity.

Several "corridors" along Peterson Creek were identified through the Cedar River Legacy program, which directs public conservation efforts in the Lower Cedar River. Peterson Creek's headwaters are at Spring Lake; tributary flow comes from Lake Desire and large wetlands to the north. Peterson Creek flows through the "Upper Peterson Creek Corridor" between Spring Lake/Lake Desire Parks and Peterson Lake Park. The remainder of the creek from downstream of Peterson Lake Natural Area through the Cedar River is designated "Lower Peterson Creek Corridor."

## Part 2. Acquisition History, Funding Source and Deed Restrictions

### Funding Sources

All three parcels all have the following restrictions on the title deeds: "The property herein conveyed is subject to open space use restrictions and restrictions on alienation as specified in RCW 84.34.200, et seq., and King County Ordinance No. 9071, 10750, 11068, and 11713."<sup>4</sup> These restrictions refer to the following documents:

- Ordinance 9071 (July 27, 1989) authorized a public vote on 1989 Open Space Bonds.
- Ordinance 10750 and 11068 (March 8 and October 3, 1993) authorized the Regional Conservation Futures 1993 Bond Acquisition Program (per regulations in RCW 84.34.200). Under Conservation Futures, property use is restricted to low-impact passive-use recreation, non-motorized use, and minimum 15% impervious surfaces.
- Ordinance 11713 (February 15, 1995) refers to an allocation of Waterways 2000 funds for acquisition and stewardship. There are no explicit restrictions contained in the ordinance.

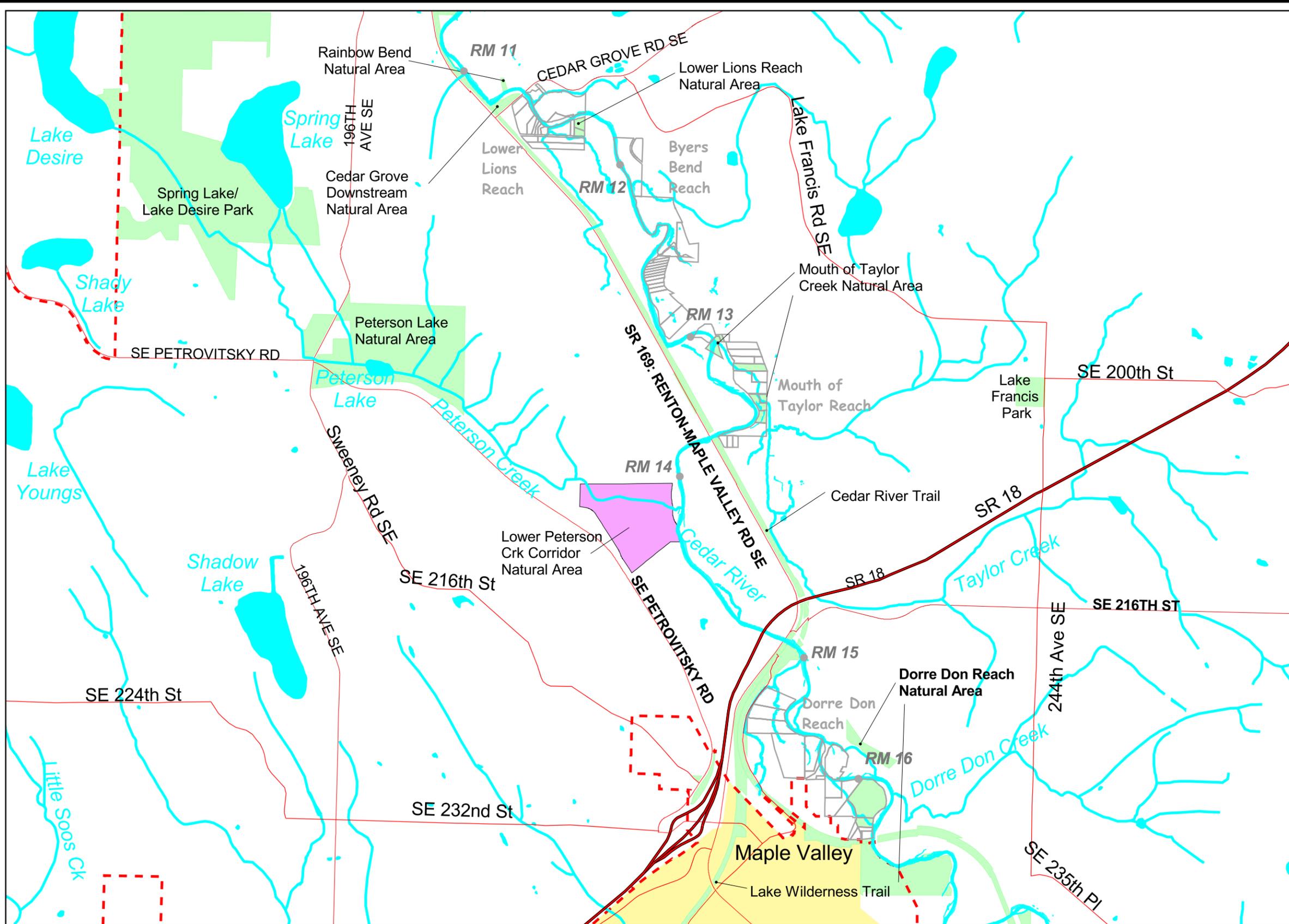
The following information pertains to the funding sources which are referred to in the above deed language:

- *Conservation Futures Tax Levy*: Conservation Futures Tax (CFT) levy is authorized by state statute RCW 84.34.230. A county may place this levy upon all taxable property in its jurisdiction. Revenues may be placed in a Conservation Futures Fund for jurisdictions or nonprofit nature conservancy corporations to acquire open space land or rights to future development within that county (these development rights are termed "conservation futures" in RCW 84.34.220). Open space is defined in RCW 84.34.020 generally as land contributing to natural resources, streams, water supply, public land network, historic sites, visual quality, or as certain agricultural conservation lands. Acquisition criteria identified by King County include: wildlife, salmonid, or rare plant habitat value; scenic resource, community separator, greenbelt, or general park and open space value; or historic and cultural resources. Additional consideration is given to passive recreation opportunity, interpretive opportunity, threat of loss, complexity of acquisition, public-private partnership, regional

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<sup>3</sup> May be renamed to Griffin Lake Natural Area depending on a forthcoming (expected in 2005) decision on a re-naming application by USGS Board of Geographic Names, and subsequent King County Council renaming action.

<sup>4</sup> First American Title Company Statutory Warranty Deed #41181JMCI (10/11/01); Recording # 20011011000415 and Commonwealth Title Insurance Company Statutory Warranty Deed #C8563, H779503 (3/15/00); Recording # 20000315001600).



### Legend

- Lower Peterson Creek Corridor Natural Area
- Selected Public Lands
- River Mile Markers  
Miles are from Lower Cedar Basin Action Plan
- River Reach Boundaries  
Lower Cedar River reach extents are designated by Cedar River Legacy Program
- Rivers and Lakes
- Streams
- KC Urban Growth Area
- Municipal Area
- Streets
- Freeways

April 21, 2004

800 0 800 1600 2400 3200 4000 Feet

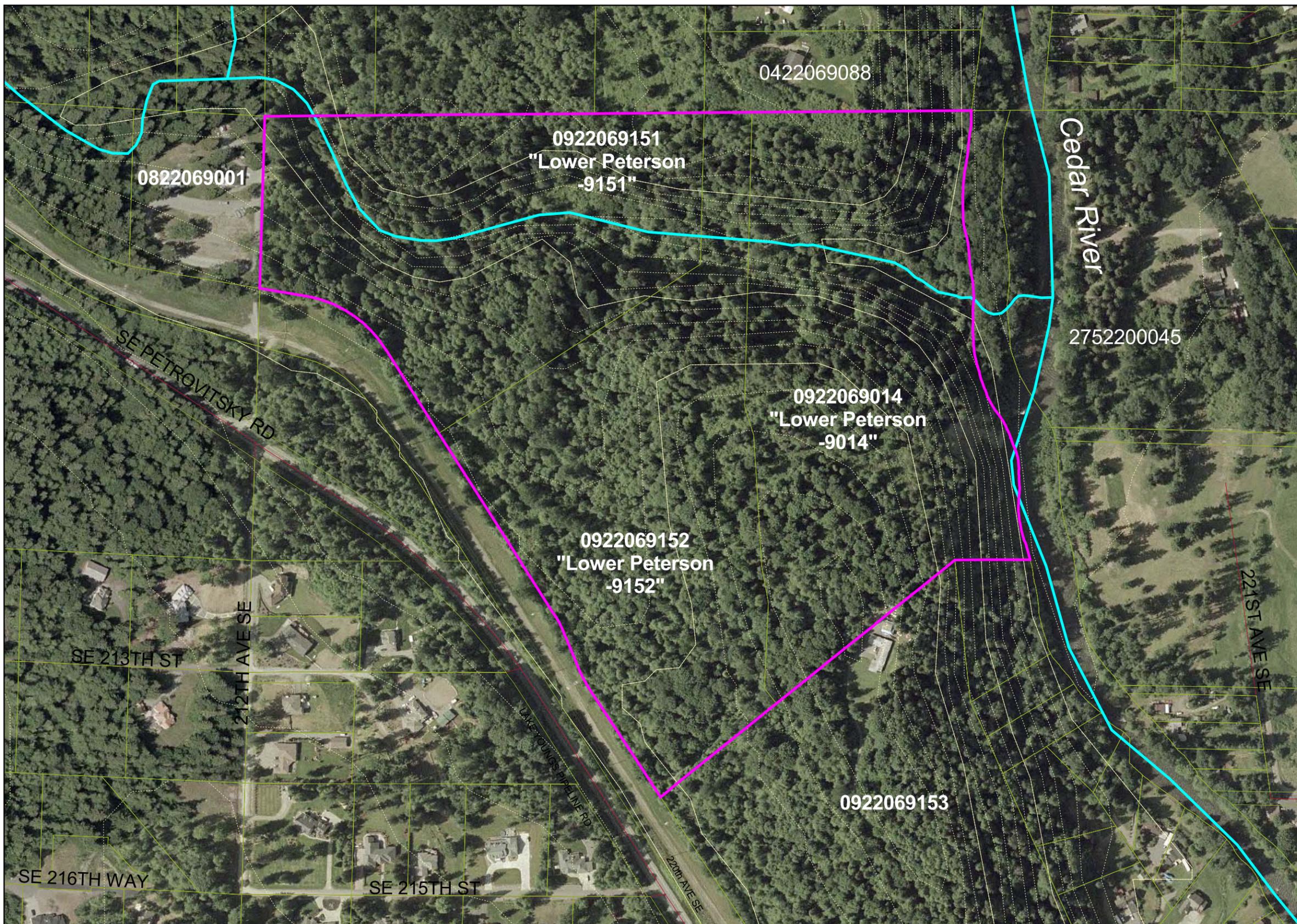
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# Figure 1

## Lower Peterson Creek Corridor Natural Area: Vicinity Map



### Legend

-  Lower Peterson Creek Corridor N. A.
-  Streams
-  100 foot Contour Intervals
-  20 foot Contour Intervals
-  Streets
-  King County Tax Parcels



April 21, 2004  
 60 0 60 120 180 240 300 Feet

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Note: Stream and topographic layers are approximate, mapped from King County GIS system. onto 2002 USGS aerial photos



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# Figure 2

*Lower Peterson Creek Corridor Natural Area: Site Features*

- significance, relationship of proposed acquisition to existing parks, trails, or greenway systems or plans, and short-term and long-term stewardship commitment at the site (KCC 26.12.025).

King County Council directs the spending of a portion of annual CFT funds; a Citizen’s Oversight Committee reviews and approves competitive applications for the remainder of the funds. CFT funds are allocated to sponsoring jurisdictions with the requirement that matching funds from the applicant jurisdiction are of equal or greater value to CFT funding sought (matching funds may be cash, land trade, or value of land purchased adjacent to proposed acquisition). Acquisitions may be fee simple or less-than-fee acquisitions.

Purchases made with Conservation Futures funds are to be used for low-impact, passive-use recreation. Motorized use is limited to parking/staging/maintenance areas. “Non-vegetative impervious surfaces” should cover less than 15% of the site (CFT 2002). Conservation futures interests shall not be transferred except with agreement that land interests shall be preserved in accordance with the intent and language of RCW 84.34.230; uses of lands shall not be altered unless equivalent lands within the geographic jurisdiction are provided (KC Ordinance 10750, p. 10).

- *1989 Open Space Bond*: King County voters authorized the \$117,640,000 King County Open Space Bond initiative, described in King County Ordinance 9071, in November 1989 to provide funds for the acquisition, development, renovation and improvement of public green spaces, green belts, open space, parks and trails in King County. Specific goals included preserving wildlife, enhancing scenic vistas, providing access to the water and open space, and providing trail connections between virtually all the cities in King County to a regional trail system and trails within the suburban cities and unincorporated areas of King County (King County Council 1989). King County Ordinance 9071 authorizes reclassification of bond funds in Section 8, part C. Restrictions on land conveyance associated with Open Space Bond funds are identified in Section 8, part D.
- *Waterways 2000 funds*: In 1993 King County Council approved the Waterways 2000 Program that established a system of interlocking greenways in six priority basins (i.e. Bear Creek Basin, Lower Cedar River Basin, Griffin Creek Basin, Patterson Creek Basin, Middle Green River Basin, and Middle Fork Snoqualmie River Basin). These greenways were protected through a variety of measures: acquisition, conservation easements and Public Benefit Rating System (PBRs). The King County Waterways 2000 properties are to provide major recreational opportunities, protect high quality habitat lands, safeguard critical scenic resources, preserve properties of cultural and historic importance and help preserve major fish runs (King County Council 1989, Motion 9175). Conserving threatened high quality biological systems, is the program’s primary objective (King County Motion 9175, Appendix A: Program vision, objectives and workplan). King County Council appropriated acquisition funds for Waterways 2000 properties through the pooling several funding sources (i.e. 1989 Open Space Bond, CFT and REET funds). These funds are restricted to open space acquisition only (CFT), park and open space acquisition only (REET) and open space capital purposes only (1989 Bond funds) (King County 1995, Waterways 2000 Acquisition and Stewardship Recommendations). CFT and open space bond funds are described above; there are no restrictions associated with the use of REET funds.

## Easements and Conditions

Lower Peterson-9152 and -9014 are subject to a road easement for ingress and egress (location is unclear but may be across the southerly 60 feet of Lower Peterson-9152; Recording #199606140954). These parcels have on their titles reserved mineral rights; a notice of Cedar River Water and Sewer District connection fees if developed; a notice of “the rights of the City of Seattle to increase the natural flow of water”; a 25-foot stream bank access easement; and a utility easement across an unspecified portion of the parcels. The parcels are subject to a 60-foot wide access and utility easement across the southwest portion of Lower Peterson-9152 by the City of Seattle to operate, maintain, and repair pipes that carry storm and

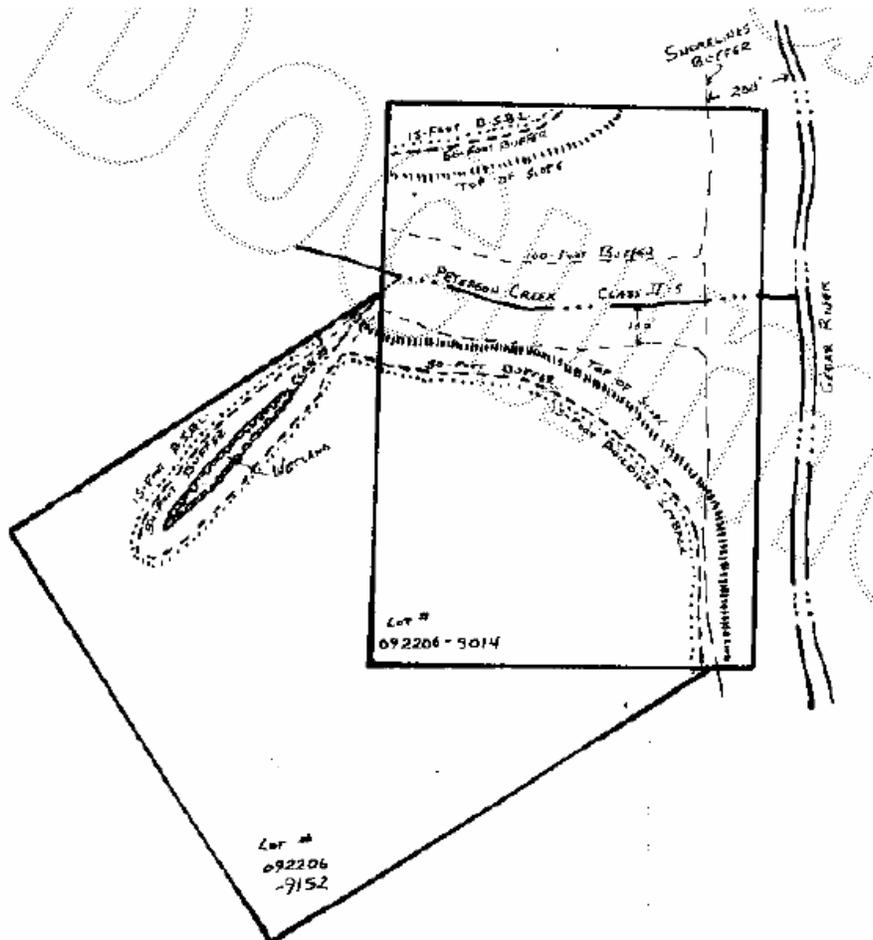
surface water (Recording # 199202131538 and cited in Recording # 199608080939). These parcels also have a sensitive area notice on the title (Recording # 199605230679) indicating the location of Peterson Creek, associated wetlands, and the top of the steep slope on the parcel (see Figure 3 for a copy of the parcel sketch in the sensitive area notice).

Lower Peterson-9151 is subject to reserved mineral rights, and an easement to cut and fill slopes along the Cedar River Pipeline right-of-way.

Two boundary line adjustments are recorded for the site (recorded under #199608080939 (Official Public Records) and under #199807279015 (Land/Survey Records)). These documents adjusted the boundary from the boundaries shown in Figure 3 below to those shown in Figure 2.

**Figure 3. Image from Sensitive Area Notice on Title (Recording Number #199605230679).**

Notes on document indicate scale is 1:400 on original document, map drawn by King County DDES. Note that parcel boundaries were moved in two Boundary Line Adjustments since this document was produced.



### Part 3. Ecological and Physical Setting

This section describes the existing natural resources and ecological processes associated with the Lower Peterson Creek Corridor Natural Area. Additional analysis is presented in Part 6 below. Figure 2 depicts site features such as topography, streams, wetlands and floodplains.

## Topography and Soils

The site contains extremely steep topography around the Peterson Creek ravine. The property drops from approximately 500 feet elevation to 280 feet at the Cedar River across about 600 feet in distance. The slopes above Peterson Creek and the Cedar River are mapped as landslide hazard areas, and almost the entire Natural Area is mapped as erosion hazard area. Periodic erosion may contribute sediments, gravels, and woody debris to the mainstem Cedar River and to Peterson Creek. The Habitat Limiting Factors report provided the following information about this corridor (Kerwin 2001, p. 341):

“There is a high incidence of landslides that are responsible for delivering sediments and wood (both large and small) to the stream channel. It is unclear if these landslides are at a rate greater than historic levels given the natural instability of the adjacent soils.”

The Cedar River valley is approximately 2/3 mile wide in the vicinity of the Peterson Creek confluence. The Cedar River runs along the toe of the slope of Lower Peterson-9014 on the very western edge of the Cedar River valley. While the stream corridor slopes are heavily wooded, the slopes above the Cedar River is so steep as to be unvegetated in many areas. The slopes are visible as sandy bluffs when viewed from the east along SR 169 in the Cedar River valley.

The soils along the creek corridor are primarily Alderwood and Kitsap soils on very steep (25-70%) slopes (AkF). The composition and permeability of this soil type vary by site; runoff is rapid and erosion hazard is severe. Alderwood soils are moderately well-drained soils located at upland sites, formed under conifers in glacier deposits. The upland portions of the site are classified as Alderwood gravelly sandy loam soils, 15-30% slopes (AgD). This soil type may include areas of hydric soils. Runoff is medium and erosion hazard is severe (Snyder et al. 1973).

## Hydrology and Channel Morphology

### *Cedar River*

Lower Peterson Creek Corridor Natural Area parcels are located at approximately RM 14 of the Cedar River. Lower Peterson-9014 contains a portion of the riverbank as detailed in the legal description of the property,<sup>5</sup> but due to changes in the river's position over time it is unclear how much river is included within the boundary. The GIS layer for King County tax parcels available from King County DNR maps the Cedar River's left bank as belonging to the parcel across the river (parcel 2752200045) (see Figure 2). The legal description for parcel 2752200045 does not indicate boundary survey locations<sup>6</sup> so the legal ownership of the left bank of the Cedar River on Lower Peterson-9014 cannot be readily confirmed.

Using maps and aerial photographs, Perkins (1994, also King County 1993 p. 5-23) described historic changes in channel characteristics between the reach extending between RM 13.8 and RM 15.0. This reach was identified based on channel morphology and slope. The Cedar River Current and Future Conditions Report describes this reach as follows (King County 1993, p. 5-29):

“No lateral migration could be detected at the resolution of the aerial photographs between 1936 and 1989. The 1865 map and the presence of small channels on the floodplain both indicate that the river has historically occupied courses as much as 500 feet east of the present channel. This relatively straight, historically unbraided reach is constrained by the west valley wall as well as by revetments at both ends. Future changes in channel position are likely to be limited.”

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<sup>5</sup> Legal description notes that property extends“...to west bank of Cedar River then along west bank the following 11 courses: N08-21-34W 81.82 ft...” Due to the shifting river course, the 11 specific courses included in legal description likely no longer represent the river's edge. (From Assessor's E-Real Property Record available at: <http://www.metrokc.gov/assessor/eRealProperty/parcel.asp?Accept=1&ParcelNbr=0922069014>)

<sup>6</sup> The site is listed as Lot 8 of the W. D. Gibbon Farm plat on Assessor's records at [http://www5.metrokc.gov/reports/property\\_report.asp?PIN=2752200045](http://www5.metrokc.gov/reports/property_report.asp?PIN=2752200045).

Perkins noted that the 1895 active channel width was 210 feet; the 1989 active channel width is 150 feet. She also characterized the natural degree of confinement as “unconfined,” but characterized the current level of hydrological modifications as “moderate.” The wetted channel width has decreased from a maximum of 136 feet and minimum of 73 feet in 1895 to a maximum of 96 feet and minimum of 78 feet in 1989. During this same time the historic pool frequency has decreased from “high” to “low” (Perkins 1994, Blair 2003).

### *Peterson Creek and Tributaries*

The Peterson Creek (WRIA #08.0328) basin encompasses Peterson/Griffin Lake, Lake Desire, and Spring Lake, and 4 large wetlands. Peterson Creek is 2.6 miles in length, classified as a King County Class 2, salmon-bearing stream. The stream is described in the Current and Future Conditions Report as “generally good to excellent habitat that is well-buffered largely by an extensive lake and wetland network in its upper basin and a mostly undeveloped riparian corridor throughout much of its length.” (King County 1993, p. 7-59)

Peterson Creek’s headwaters are in Spring Lake and its associated tributary streams/wetlands; outflow from the lake flows through a large wetland system. A right-bank tributary at stream mile 2.4 (WRIA #08.0328B) arises in Wetlands 14 and 15,<sup>7</sup> flows to Lake Desire, and from Lake Desire downstream to Peterson Creek. These wetland complexes and headwater systems are considered to provide relatively high quality habitat, although the Habitat Limiting Factors analysis notes limited problems with increased peak flows and with water quality due to development. (For more information about the drainage consult King County 1993, p. 7-60 and King County 1999, p. 12-13.)

Lake Youngs is not contained in the Peterson Creek basin under the current drainage boundary (King County 1993, p. 7-60). The Seattle Water Department uses the lake for storage and sediment settling of Cedar River water (King County 1999, p. 12) To protect water quality, the water department diverted many areas of surface water to the northeast of Lake Youngs, including Shady Lake drainage, other intermittent streams, and streams formerly draining to Peterson Lake. These streams currently flow through the Honey Creek Diversion Ditch which runs to the south of Peterson Lake and enters Peterson Creek (King County 1999, p. 6 & 12).

Peterson Lake is nearly 6 acres in size, surrounded by the Wetland 42 system on its upstream edge. Historically, the outflow of Peterson Lake was contained in a pipe, though the creek was daylighted in 1988 (King County 1999, p. 13).

Peterson Creek between Peterson Lake at RM 1.6 and 0.5 (at the western boundary of Lower Peterson Creek Corridor Natural Area) is considered relatively healthy habitat, though some impacts of clearing and channelization are particularly evident towards Peterson Lake. The creek had been straightened and channelized between stream mile 1.6 and 1.2. Between RM 1.2 and RM 0.5, the creek contains long riffle reaches and habitat is “good to excellent...especially where accumulations of stable [large woody debris (LWD)] occur. The riparian system of this reach is still recovering from past logging and is not yet naturally contributing significantly to the addition of LWD.” (King County 1993, p. 7-59 to 7-60)

Lower Peterson Creek Corridor Natural Area encompasses the lower 0.5 miles of Peterson Creek, containing its confluence with the Cedar River at approximately RM 14. The lower 0.5 miles of Peterson Creek are described in the Current and Future Conditions Report as (King County 1993, p. 7-59):

“good to excellent habitat conditions...where there is also a high incidence of landsliding, delivering sediment and LWD to the channel...[This reach is thought to represent] pre-development conditions given the steepness of the stream and its valley walls and the geologic make-up of the area.”

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<sup>7</sup> Further description of wetlands provided in “Wetlands” section below; additional information in King County 1993, p. 7-60 to 7-64.

## *Wetlands*

The Peterson Creek sub-basin includes three Class 1 wetland and one Class 2 wetland systems (as mapped by King County). Wetland 14 (43 acres, class 1) and Wetland 15 (17 acre, Class 1) both are located north of Lake Desire and contribute flow to Tributary 0328B. Wetland 28 (83 acre, Class 1) encompasses Spring Lake and land on the south and west sides of the lake through which Peterson Creek flows. Wetland 42 surrounds Peterson Lake and includes land on the west side of the lake. Although the Wetland inventory maps Wetland 42 as a 14.5-acre, Class 2 wetland, it may be up to 23 acres in size (King County 1993, p. 7-64) and may be a Class 1 wetland (King County 1999, p. 4). Additional information about these wetlands is available in the Current and Future Conditions Report (King County 1993, p. 7-60 to 7-64).

Lower Peterson Creek Corridor Natural Area does not contain wetlands mapped by the National Wetlands Inventory or the King County Wetlands Inventory. However, the property supports at least one small area of wetland as mapped in Figure 3 and designated on the title by the Sensitive Areas Notice. This wetland was not located during a site visit by staff in March 2004.

## **Vegetation**

Lower Peterson Creek Corridor Natural Area supports extensive tracts of mature deciduous and coniferous forest along the stream corridor. The Habitat Limiting Factors Analysis for the Cedar River states the following about Peterson Creek: "From RM 0.0 to 0.5 the riparian zone is generally considered good to excellent. Large conifers and deciduous trees, generally mid to late seral in age, dominate the riparian zone." (Kerwin 2001, p. 341) The Current and Future Conditions Report notes that "the vegetation in the ravine is "nearing old growth in structure and function." (King County 1993, p. 7-59) The steep slopes along Peterson Creek and above the Cedar River may be subject to landslides, which would affect the development of the forest in these areas. (See Figure 4)

The riparian area includes typical deciduous species such as bigleaf maple, red alder, black cottonwood, with small proportions of cascara. Coniferous species include western hemlock, western red cedar, and Douglas-fir. The stand represents fairly old second-growth forest; the overstory contains significant amounts of coniferous species, with understory regeneration.

Many portions of parcels Lower Peterson-9152 and -9014 located away from the creek corridor have been cleared of most of their coniferous growth. These parcels support similar deciduous species in the canopy as were described above; the canopy is more open and dominated by shrubs such as elderberry, salmonberry, vine maple, Indian plum, and invasive blackberry (Himalayan and evergreen blackberry). Additional species observed on site include Oregon grape, snowberry, bracken fern, sword fern, and rush. (See Figure 5)

Non-native species on site include Himalayan and evergreen blackberry mentioned above, widespread on parcels Lower Peterson-9152 and -9014 particularly in the areas with open canopy. Tansy ragwort was noted on the main pathway into the site on parcel Lower Peterson-9152 along the main path leading into the parcels. Comfrey was also observed on the site.

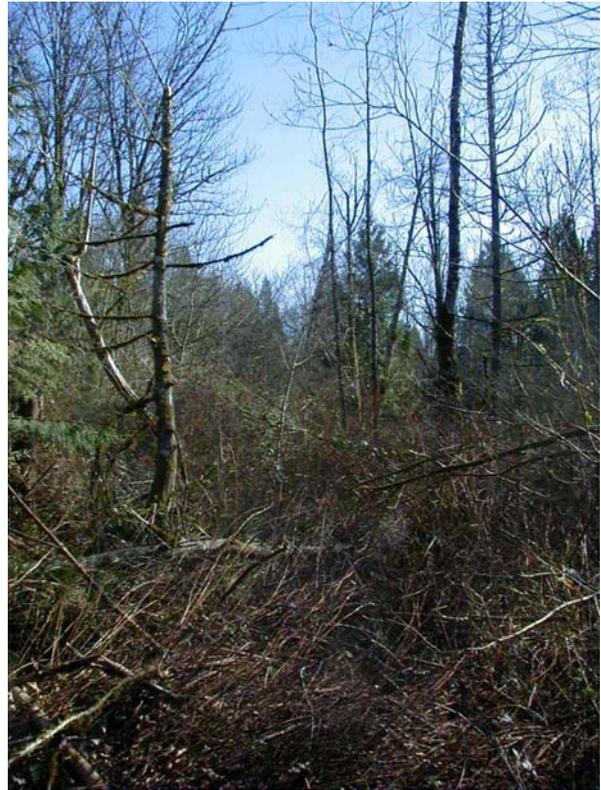
## **Fish and Wildlife**

Peterson Creek is used by all species of salmonids that occur in the Cedar River, including Chinook salmon and coho salmon listed as threatened and as candidate species under the Endangered Species Act. No additional information about wildlife usage is available for the site.

**Figure 4: View of forest on steep slope above Peterson Creek. Photo taken March 2004.**



**Figure 5: View of previously logged areas on upland portions of site. Photo taken March 2004**



A species list for the 1999 Peterson Lake Park Natural Area Site Management Plan is included in Appendix 1. Although the species at Peterson Lake may vary because of the extensive wetlands present at that site, the geographic proximity may support relatively similar species presence.

## Part 4. Site Use and Management Chronology

There is minimal use of this site. Public use may include walking or other low-impact uses by local residents.

The property is accessible along 220th Ave SE, but there is no established parking area or signage indicating that the site is public property. A former roadway leads into the site from the southwest corner of parcel Lower Peterson-9152. Informal trails lead off of this former roadway, but there was little evidence trail use during a March 2004 site visit.

Aerial photographs indicate potential boundary encroachment from adjacent houses on both the western and the southeastern boundaries.

Occasional dumping may occur on site. Evidence of trash noted in March 2004 includes a snowmobile and assorted garbage.

Upon acquisition in 2001, volunteers, Earth Corps, and staff performed understory plantings at various locations in Lower Peterson-9152 and -9014. These plantings were not documented as to location, and were not maintained.

## Part 5. Analysis

The purpose of this section is to provide a context and foundation for developing recommendations that meet the NRL program mission of protecting the ecological value of lands within the Lower Peterson Creek Corridor Natural Area. Site-specific information, public access considerations, and the larger landscape considerations described in the conservation principles section of the *Ecological Lands Handbook* will be used to help meet this purpose.

### Information Gaps and Development of Management Recommendations

There are significant gaps in how much is known and understood about ecological conditions and physical processes in Lower Peterson Creek Corridor Reach Natural Area because recent comprehensive baseline inventories of plant, fish, and wildlife species, and geologic and hydrologic conditions do not exist. This type of information is necessary prior to developing restoration concepts and specific designs, particularly for large-scale changes and modifications to site features. If basic site inventory and assessment is not done, there is a strong likelihood of inadvertently harming either individual plant or animal species or ecological processes that sustain one or more of these species.

Therefore, prior to undertaking major management activities in the Natural Area, a site inventory and assessment should be undertaken that is focused, at a minimum, on the conditions and processes that the management activities will affect. Such assessment or evaluations of proposed actions should be conducted by those staff with appropriate expertise (e.g. Watershed and Ecological Assessment Team staff). Inventory and assessment information may be available in the Current and Future Condition Report (King County 1993), Habitat Limiting Factors Analysis (Kerwin 2001), Lower Cedar Basin Plan (WMC 1998), Ecosystem Diagnosis and Treatment study of the Cedar River, and WRIA 8 Plan Framework and Preliminary Actions Report (WRIA 8 Service Provider Team 2003), as well as past and future work by King County ecological staff.

Prior to minor management activities (e.g., small planting project), the proposed activity should be evaluated to determine whether or not the activity could do harm to existing or future desired ecological processes and conditions. If the likely outcome is harm, then the activity should not be undertaken.

### Species of Concern

Because of the lack of a comprehensive biological inventory at these sites, the species identified in this document do not account for all species that use the site for one or more stages of their lifecycles. However, documented evidence of Chinook salmon, and probable use by bald eagles, both listed as threatened under the Endangered Species Act, make habitat preservation and restoration necessary management priorities at the site.

### Restoring Processes, Structure, and Functions

Ecological processes and functions at Lower Peterson Creek such as nutrient, woody debris and sediment contribution to the creek appear to be relatively intact.

The Habitat Limiting Factors Analysis notes that a main habitat issue of the lower mainstem Cedar is the contribution of steep banks and landslides to long-term gravel recruitment and pool habitats. “Large, deep pools tend to form at the base of many of these slide areas, often providing excellent habitat. This slide contributes gravels and fine sediments and has added some LWD to the river channel. Habitat at the base of this slide is excellent due to LWD accumulations and a complex channel shape.” (Kerwin 2001, p. 336) The steep banks along the Cedar River on the eastern edge of the site represent a source of gravel/sediment and LWD to the Cedar River.

The site supports mature second-growth forest throughout the riparian corridor; upland areas of the site have been harvested in the past. The main structural considerations would be to control invasive, non-

native species, and to promote establishment and growth of a native upland forest. Plantings should represent the historic vegetative communities commonly associated with forested riparian areas in western Washington and at this site in particular. Inherent in the restoration should be efforts to maintain structural complexity, plant diversity and multiple canopy layers in order to provide a variety of vegetative and physical features that would provide a number of niches for wildlife.

## **Public Use**

Public use of this site is very limited at this time. A former roadbed leads into the site from the entrance off of 220<sup>th</sup> Ave SE. Occasional side roads/trails had been created off of the main roadbed by the previous owners. These trails have been growing over and are not regularly used. These sites are recent acquisitions; as the sites are in public ownership for a longer amount of time, public use may increase. The type and extent of use should be monitored to ensure that it does not inappropriately impact sensitive areas or habitat quality at the site. The site entrance area and areas along the main entrance trail has had dumping problems in the past. These areas should be monitored for problem uses in the future.

There are no apparent revenue generating opportunities at the site.

The southeast side of Lower Peterson-9014 and the northwest side of Lower Peterson-9151 have areas of possible boundary encroachment. Further visit to or survey of these areas would identify whether encroachment has occurred; if there is property encroachment, it may be addressed through working with neighbors, signs, or fences depending on the nature of the encroachment.

## **Part 6. Management Goals, Objectives, and Recommendations**

The objectives and recommendations in this section are derived from the standard practices for most NRL sites. Office of Rural and Resource Programs staff will revise the recommendations for Lower Peterson Creek Corridor Natural Area as new information from baseline inventory, assessment, and site monitoring programs and other initiatives becomes available for use in land management decisions.

### **Goals for Lower Peterson Creek Corridor Natural Area**

The goals for all King County Ecological Lands are to:

- conserve and enhance ecological value, and
- accommodate appropriate public use that does not harm the ecological resources on site

The objectives and recommendations that follow are designed to support these goals at Lower Peterson Creek Corridor Natural Area.

### **Management Objectives and Recommendations**

**Objective: Maintain ecological integrity of the site**

**Recommendation: Ensure that management and public access support the regional ecological value of site**

Decisions about site management and public access should consider the ecological role of, in particular, the steep slopes above Peterson Creek and the Cedar River, and the mature second-growth forest habitat along the Peterson Creek Corridor, and should preserve and protect ecological integrity of this area in particular. Public use at the site may be more appropriately directed to the upland areas in the south and west of the site on the informal trails that follow old roads. This overarching recommendation is carried out through the various recommendations below.

**Objective: Develop long term ecologically based protection and restoration actions**

**Recommendation: Perform baseline inventories and assessments**

Complete baseline inventories and assessment of basic ecological conditions and physical processes. Staff with appropriate expertise (e.g., ecologists, biologists, and engineers) should perform this work. Existing documents, studies, and staff research may contribute substantial inventory and assessment information about the sites.

**Recommendation: Develop recommendations for site restoration from inventory information**

Use inventory and assessment information to develop projects to achieve a set of goals and objectives consistent with those identified for King County Ecological Lands. As projects on the Natural Area are prioritized and funded by King County agencies outside of the Natural Resource Lands group (or by other implementing agencies), projects should be reviewed by NRL through the “Application to Alter Parks Division and NRL Managed Properties” process to coordinate site management with project work.

**Objective: Contain the spread of invasive vegetation**

**Recommendation: Monitor and control invasive vegetation**

When staff and budget allow, King County Park staff should control the spread of invasive vegetation, where it is feasible to maintain and monitor over time. Extensive presence of blackberry throughout the upland portions of the site makes it a low priority for control (unless ongoing funding and maintenance is assured).

**Objective: Allow current level of passive recreation at the site.**

**Recommendation: Monitor public access**

Public use is fairly low at this time, consisting of walking on informal trails in the upland portions of the site. Park staff should note changes in visitor numbers and types of recreational activities and observe any noticeable visitor impacts on the ecological values of the site. This information should be reported annually to King County Natural Resource Lands Management Staff responsible for updating site management guidelines.

**Objective: Protect the site from inappropriate public uses**

**Recommendation: Control litter/dumping and inappropriate activities**

Park staff should monitor the site for dumping, trash, or inappropriate uses, and respond as necessary to maintain a clean and safe property. Monitoring should occur at least monthly at the entrance gate and main road into site, and at a lower frequency for other areas of the property. The limited amount of dumped material currently at the site should be removed.

**Recommendation: Survey boundaries to determine whether encroachment has occurred**

Surveys of the southeast side of Lower Peterson-9014 and the northwest side of Lower Peterson-9151 should indicate whether neighboring properties have encroached on the site. Depending on the type and extent of encroachment, resolve situation with neighboring property owner.

## **Implementation**

Many of these recommendations pertain to ongoing site maintenance and short-term management. These short-term recommendations are currently being implemented through actions by the Parks Resource Coordinator. Table 3 presents the time frame and sections responsible for recommendations.

Recommendations that address long-term management will need to be developed when funded and prioritized by DNRP management (within the work programs of NRL, Science, Basin Stewards, CPOSA). As new information is gathered for the site, restoration projects may be developed following adoption of these site management guidelines. Projects should be consistent with management objectives and approaches described above and in the Ecological Lands Handbook. Funding for restoration projects

may be available through Surface Water Management CIP funding or salmon conservation planning funds.

**Table 3. Matrix of Management Recommendations**

Recommendations	Year	Park Resource Staff	Basin Steward	NRL staff	CPOSA	WEAT
<b>Priority One</b>						
Establish new planting projects	At least monthly	X				
Control invasive vegetation	At least monthly	X				
Control litter/dumping and encroachment activities	At least monthly	X				
Monitor public access	At least monthly	X				
Boundary survey	As prioritized and funded	X		X		
<b>Priority Two</b>						
Perform baseline inventories and assessments	As prioritized and funded			X		X
Develop recommendations from inventory information	As prioritized and funded		X	X	X	X
Update Site Management Guidelines	Within at least 5 years			X		

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### Personal Communication

- Holecek, L. 2004. Acquisitions agent, King County DNRP. Email communication with Ingrid Lundin. 4/21/2004.

# Appendix 1. Peterson Lake Natural Area Species List

Peterson Lake is located about 1 mile upstream of Lower Peterson Creek Corridor Natural Area. Due to distinct differences in site conditions, this species is not considered to reflect the species present at Lower Peterson Creek Corridor Natural Area, but some species may occur on both sites.

Species list is from p. 10 of Peterson Lake Park Natural Area Site Management Plan, King County DCFM 1999. Available online at: <ftp://dnr.metrokc.gov/dnr/library/1999/kcr1221/peterson-lake-natural-area.pdf>.

**Table 2: Wildlife Species Observed at Peterson Lake Park Natural Area**

**SCIENTIFIC NAME COMMON NAME**

**MAMMALS**

<i>Aplodontia rufa</i>	Mountain Beaver
<i>Castor canadensis</i>	Beaver
<i>Odocoileus hemionus</i>	Blacktail Deer (Mule Deer)
<i>Procyon lotor</i>	Raccoon

**BIRDS**

Wading Birds:

<i>Ardea herodias</i>	Great Blue Heron
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Birds of Prey:

<i>Buteo jamaicensis</i>	Red-tailed Hawk
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Nonpasserine Land Birds:

<i>Selasphorus rufus</i>	Rufous Hummingbird
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Passerine Birds:

<i>Corvus brachyrhynchos</i>	American Crow
<i>Cuanoatta stelleri</i>	Steller's Jay
<i>Parvus atricapilus</i>	Black-capped Chickadee
<i>Troglodytes troglodytes</i>	Winter Wren
<i>Regulus satrapa</i>	Golden-crowned Kinglet
<i>Turdus migratorius</i>	American Robin
<i>Empidonax difficilis</i>	Pacific-slope Flycatcher
<i>Vermiuora celata</i>	Orange-crowned Warbler
<i>Dendroica coronata</i>	Yellow-rumped Warbler
<i>Dendroica petechia</i>	Yellow Warbler
<i>Geothlypis trichas</i>	Yellow Throat
<i>Melospiza melodia</i>	Song Sparrow
<i>Pipilo erythrophthalmus</i>	Rufous-sided Towhee
<i>Pheucticus melanocephalus</i>	Black-headed Grosbeak

**FISH**

* <i>Cottus</i> sp.	Sculpin
* <b><i>Lepomis gibbosus</i></b>	<b>Pumpkinseed</b>
* <b><i>Micropterus salmoides</i></b>	<b>Large Mouth Bass</b>
* <i>Oncorhynchus clarki</i>	Cutthroat Trout
* <i>Oncorhynchus kisutch</i>	Coho Salmon
* <i>Oncorhynchus mykiss</i>	Steelhead
* <i>Oncorhynchus nerka</i>	Sockeye Salmon
* <i>Oncorhynchus tshawytscha</i>	Chinook Salmon
* <i>Perca</i> sp.	<b>Perch</b>
* <b><i>Pomoxis nigromaculatus</i></b>	<b>Black Crappie</b>

**AMPHIBIANS**

<i>Rana catesbiana</i>	<b>Bullfrog</b>
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**Notes:**

**Bold** indicates non-native species.

\* Indicates species inventoried by others.

Site was visited April-May, 1997. This data is strictly seasonal and limited in nature; other species are expected to occur on this site.