

# **Vegetation Management Plan & Habitat Enhancement Plan**

*For the property at 17630 SE Cougar Mountain Drive, Bellevue, WA*

**Prepared For:**

**Dr Farshad Alamdari  
17630 SE Cougar Mountain Drive  
Bellevue, WA**

**Prepared By:**

**Restoration Logistics  
4213 S Bateman St  
Seattle, WA 98118**



**July 5, 2012**

## **INTRODUCTION**

This document has been prepared as part of a Critical Area Land Use Permit application for vegetation management on the property owned by Dr. Farshad Alamdari (The Owner). The property is located in the Cougar Mountain area and a single-family residence has been constructed on the southern part of the property.

The Owner wishes to fell, and in most cases remove, most of the red alder (*Alnus rubra*) trees on the northern portion of the subject property in order to allow him access to his backyard area for passive recreational use. He has concerns about the hazard posed by some of these mature trees as he is planning on having a walking trail through the area for his family's enjoyment. He also wishes to transition the dominant tree cover towards evergreen species as well as increase the variety of native shrubs, particularly of fruit bearing species to attract birds. Although the tree retention plan submitted by The Owner meets the City of Bellevue's standards, the City of Bellevue required the Owner to conduct a Wildlife Habitat Assessment due to the forested nature of his property. This habitat study was prepared by Restoration Logistics and is included in this CALUP application. The habitat study concluded that the site does not offer primary habitat for any Species of Local Importance and that the alder removals are not expected to adversely impact any those species. Nevertheless, in a letter to the Owner dated June 9, 2010, the City of Bellevue requested the landowner prepare a Vegetation Management Plan as part of Critical Areas Land Use Permit Application.

### **Management Area**

A vicinity map locating the property is attached to this report, as well as the proposed site plan and revised tree inventory. The management area is the "backyard" area to the north of the clearing limits for the new residence. This area is roughly the northern third of the lot and is approximately 1.1 acres in size.

## **EXISTING CONDITIONS**

A summary of existing site conditions for the management area is provided below. A more detailed description of the vegetation and habitat features on-site is provided in the Wildlife Habitat Assessment.

### **Landscape position (see vicinity map)**

The property is located on the north side of Cougar Mountain and although it is in the City of Bellevue, the adjoining properties to the east and west remain in unincorporated King County along with most of the properties across SE Cougar Mountain Dr to the south. The property is on the suburban fringe around Cougar Mountain Regional Wildland Park, and it and many of the nearby properties have remained substantially forested. The remaining forested habitat on the subject property is connected to the forested areas of the adjacent properties and through them to the whole of Cougar Mountain Regional Wildland Park, a large area of diverse habitats supporting a variety of wildlife.

### **Vegetation**

The entire management area is one habitat type: second growth Douglas-fir / red alder forest with a sword fern / Oregon grape understory. There are a few big-leaf maples and western hemlocks mixed in the canopy layer and a handful of other species in the shrub layer. Distribution of the species on-site is fairly uniform, although the largest and oldest Douglas-fir

trees are found along the north property line. As is common in disturbed and second growth forests in the Puget Sound lowlands, conifer regeneration is suppressed. The alder stand is mostly composed of mature and in some cases, senescent, trees. The older trees exhibit the arboricultural faults typical to this species as they age: split-trunks, broken tops, and general decay. There are several standing dead trees, or snags. Fortunately, colonization by non-native invasive species is light. Herb Robert, a groundcover species widespread in King County, was occasionally seen in small clusters, and at one location on the eastern property line, Himalayan blackberry is encroaching from larger patch on the adjacent property.

### **Critical Areas**

There are no mapped City or County critical areas on the property. The nearest mapped sensitive area is a small unclassified stream over 400 ft northwest of the property. No sensitive areas were observed on the property during the site visit. The management area as a whole is a 30-35% north facing slope. The northwest corner of the management area is slightly steeper and has been determined to be a regulated steep slope. No erosion, slumping, or other soil movement issues were observed.

### **Wildlife Habitat**

The property offers wildlife habitat for common species, including, because of its relatively good connection other to a large patch of high quality habitat (Cougar Mountain Regional Wildland Park), species that are uncommon in urban environments due to territorial size requirements. It does not likely offer primary habitat for any Species of Local Importance, although it may offer some foraging habitat and indirect support to a few of these species to the degree to which their prey are supported by the habitat on the property. These species are the red-tailed hawk (*Buteo jamaicensis*), pileated woodpecker (*Dryocopus pileatus*) and Vaux's swift (*Chaetura vauxi*).

## **VEGETATION MANAGEMENT PLAN**

### **Tree removal**

Outside of the steep slope area and its buffer, most of the red alder in the management area are to be cut down. However, the tree retention plan has been revised to retain 29 more trees than previously, and further, for four of the alders to be wildlife snagged for habitat. The revised retention plan is attached. This revision will result in an increase of the percentage of trees retained by diameter to 35%, which is greater than required by City of Bellevue Municipal Code. No removals will occur in the steep slope or its buffer in the northwest corner of the property, and no species other than red alder will be removed anywhere on the property.

The removals will be conducted under the direction of a licensed arborist and care will be taken in the course of felling and removing the trees to minimize disturbance to the surrounding soil and other native plants. No heavy equipment will be used. Some of the native plants to be installed (see below) may be used to restore any damage caused in the process of removing the trees.

### **IMPACT OF PROPOSED ACTIVITIES ON HABITAT**

Although this tree removal is a form of habitat alteration, red alder is an early successional forest species, and with this stand being relatively even aged and mature, its life span on the property is approaching its natural limit. Some of the alder have already fallen, and many show signs of decay common to this species they reach maturity. The site has a healthy understory of native

shrubs that will be experience competitive release upon the removal of the alder and will develop and proliferate in their absence.

Red alder is not known to provide breeding or other critical habitat for the three Species of Local Importance that could possibly be making use of the site. The pileated woodpecker and Vaux's swift are associated with mature and old growth coniferous forests. Under this vegetation management plan, all of the existing conifers will be protected and new ones will be planted to help move the site along a typical northwest forest succession trajectory.

## **HABITAT ENHANCEMENT PLAN**

The following activities will be carried out to enhance the wildlife habitat value of the site, replacing those functions provided by the removed red alders and further improving the habitat by removing non-native invasive species and providing conifer tree recruitment.

### **Wildlife Snags and Nurse Logs**

Four of the red alders to be cut in the lower area of the property will be wildlife snagged, creating key breeding and foraging habitat features for many wildlife species. The created snags will be at least 12 feet tall. Of the trees to be felled, approximately one quarter of the downed tree material will be left on the ground to decay, providing wildlife habitat value and returning nutrients to the soil.

### **Non-native Invasive species control**

The Owner recognizes the threat posed by invasive plant species, and plans on controlling and as much as possible removing these plants from his property. Since the site is relatively free of invasive species infestations this task will not be too difficult, but on the other hand very important because it is much better to deal with small infestations expeditiously than waiting to control a larger colony later. There is Himalayan blackberry (*Rubus armenicus*) encroaching on the east property line which will be completely removed by cutting and grubbing it out of the ground.

### **Native Plantings**

The management area will receive an enhancement planting to improve both its ecological and aesthetic value. The planting will replace the cut red alder on a 2:1 ratio for a total of 126 native trees and shrubs (Table 1). A conifer underplanting is a key component of this plan, and is often a proposed treatment in second growth forested areas with limited conifer recruitment such as found on this property. Along with the other trees and shrubs will provide wildlife forage and habitat to replace that provided by the removed alder. These plants will supplement and diversify the growth and recruitment of native species that will naturally be released upon the removal of the red alder.

The layout of the plantings will be determined by Restoration Logistics' staff at the time of installation, after the alder have been cut and removed and the wildlife snags and nurse logs created. Since the management area is relatively small and of a uniform slope and habitat type, the replacement plants can be field-located around the management area in mixed species clusters. The plants will be installed during the fall-winter planting season between October 15<sup>th</sup> and March 31<sup>st</sup>.

**Table 1a: Enhancement Planting- Tree List**

Species	Botanical Name	#	Type	Size
W. Flowering Dogwood	Cornus Nuttallii	4	Cont.	5 gal
Bitter Cherry	Prunus emarginata	4	Cont.	5 gal
Douglas Fir	Pseudotsuga menziesii	4	Cont.	5 gal
Douglas Fir	Pseudotsuga menziesii	8	Cont.	1 gal
Western Red Cedar	Thuja plicata	4	Cont.	5 gal
Western Red Cedar	Thuja plicata	8	Cont.	1 gal
Western Hemlock	Tsuga heterophylla	6	Cont.	1 gal
<b>Total number of trees:</b>		<b>38</b>		

**Table 1b: Enhancement Planting- Shrub List**

Species	Botanical Name	#	Type	Size
Vine Maple	Acer circinatum	8	Cont.	2 gal
Beaked Hazelnut	Corylus Cornuta	8	Cont.	1 gal
Ocean Spray	Holodiscus discolor	10	Cont.	1 gal
Indian Plum	Oemleria cerasiformis	10	Cont.	1 gal
Mock-orange	Philadelphus lewisii	8	Cont.	1 gal
Red-flowering currant	Ribes sanguineum	10	Cont.	1 gal
Baldhip rose	Rosa gymnocarpa	10	Cont.	1 gal
Thimbleberry	Rubus parviflorus	8	Cont.	1 gal
Red Ederberry	Sambucus racemosa	6	Cont.	1 gal
Snowberry	Symphoricarpos albus	10	Cont.	1 gal
<b>Total number of trees:</b>		<b>88</b>	Cont.	

### Monitoring and Maintenance

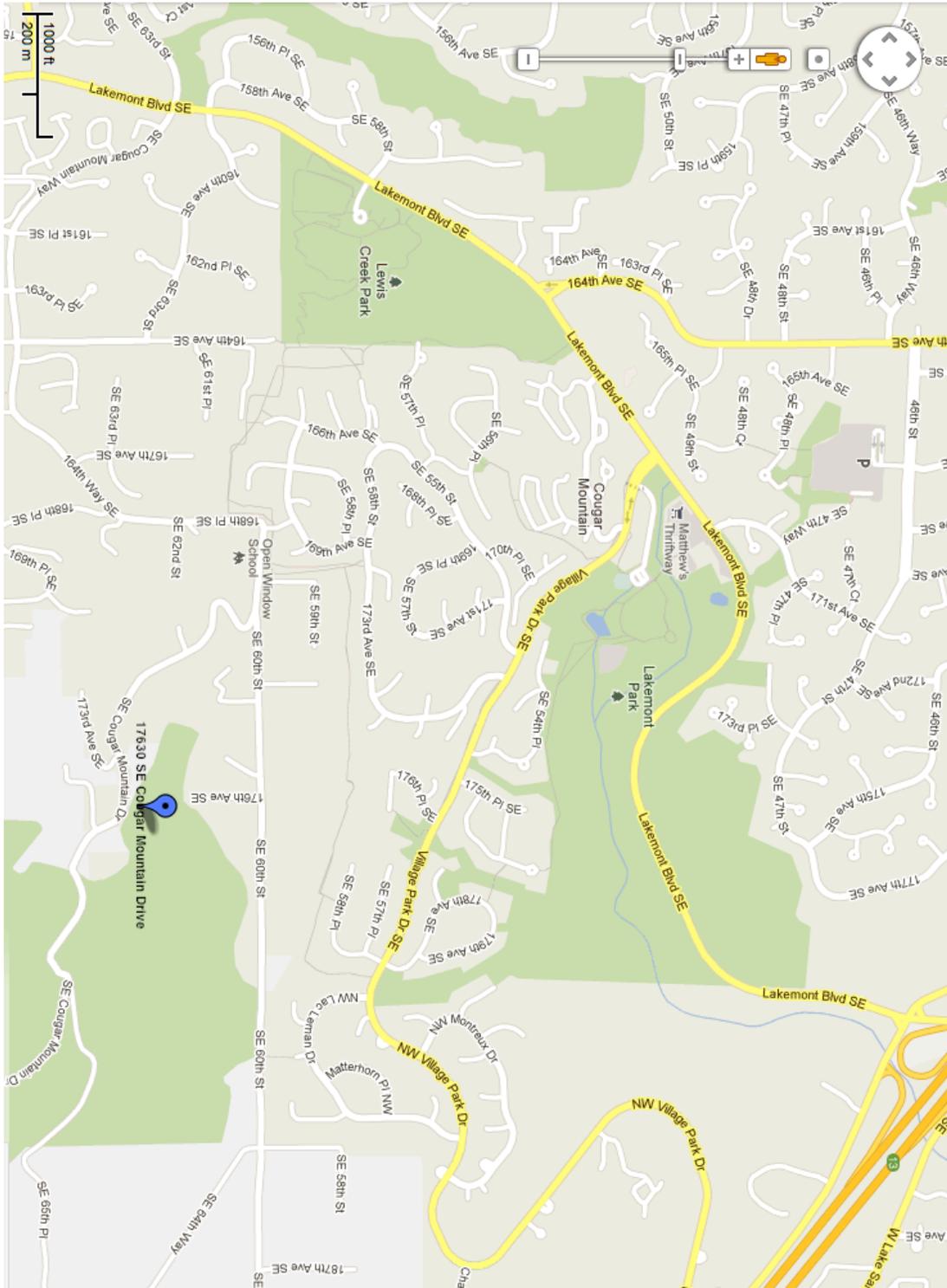
The installed plants will be monitored for a period of three years after installation. Restoration Logistics or another biologist selected by the Owner will prepare annual reports in the fall of each year. The reports will present survivorship of the installed plants and any recommended maintenance measures. The following performance standards will apply to the management area:

1. 100 percent of installed plants will survive by the end the first October following installation. Any dead plants will be replaced that fall.

2. By the end of the third year, 80 percent of the installed plants will have survived. If the less than 80 percent have survived, a supplemental planting will be conducted to restore the installed plant numbers to the original value.
3. Cover by blackberry and other non-native invasive species will not exceed 10 percent during the monitoring period.

The Owner shall be responsible for maintaining the installed plants, and controlling invasive species so that these performance standards are met. Supplemental watering may be necessary over the first summer. All weeding to be conducted by hand removal, including roots. No pesticides will be used.

# Vicinity Map: Alamdari Residence, 17630 SE Cougar Mountain Drive



### Alamdari Property Tree Inventory Table

TREE	SPECIES	DIA	WT	WT'D DIA	SAVED	Notes
T1	FIR		26	1	26	26
T2	FIR		28	1	28	28
T3	FIR		38	1	38	38
T4	ALDER		12	0.5	6	6
T5	ALDER		20	0.5	10	10
T6	ALDER		12	0.5	6	6
T7	ALDER		20	0.5	10	
T8	FIR		36	1	36	36
T9	HEM		8	1	8	8
T10	ALDER		12	0.5	6	
T11	ALDER		18	0.5	9	
T12	ALDER		12	0.5	6	
T13	ALDER		14	0.5	7	
T14	ALDER		14	0.5	7	
T15	ALDER		15	0.5	7.5	Wildlife Snag
T16	ALDER		22	0.5	11	Wildlife Snag
T17	ALDER		13	0.5	6.5	
T18	ALDER		20	0.5	10	
T19	ALDER		14	0.5	7	
T20	ALDER		20	0.5	10	
T21	MAPLE		16	1	16	16
T22	ALDER		20	0.5	10	
T23	ALDER		20	0.5	10	
T24	ALDER		14	0.5	7	Wildlife Snag
T25	ALDER		14	0.5	7	
T26	FIR		8	1	8	8
T27	ALDER		12	0.5	6	
T28	ALDER		14	0.5	7	7
T29	ALDER		14	0.5	7	7
T30	ALDER		14	0.5	7	7
T31	FIR		14	1	14	14
T32	ALDER		12	0.5		Fell naturally
T33	ALDER		18	0.5	9	9
T34	ALDER		14	0.5	7	7
T35	ALDER		18	0.5	9	9
T36	HEM		10	1	10	10
T37	ALDER		16	0.5	8	8
T38	ALDER		14	0.5	7	7
T39	FIR		16	1	16	16
T40	ALDER		14	0.5	7	7
T41	ALDER		16	0.5	8	8
T42	ALDER		14	0.5	7	7
T43	ALDER		14	0.5	7	7
T44	ALDER		16	0.5	8	8
T45	ALDER		28	0.5	14	14
T46	ALDER		22	0.5	11	Wildlife Snag
T47	ALDER		14	0.5	7	
T48	ALDER		14	0.5	7	
T49	ALDER		16	0.5	8	
T50	FIR		10	1	10	10

**Alamdari Property Tree Inventory Table**

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TREE	SPECIES	DIA	WT	WT'D DIA	SAVED	Notes
T51	ALDER	16	0.5	8		
T52	ALDER	14	0.5	7		
T53	ALDER	12	0.5	6		
T54	ALDER	14	0.5	7		
T55	ALDER	12	0.5	6		
T56	ALDER	16	0.5	8		
T57	ALDER	20	0.5	10		
T58	ALDER	16	0.5	8		
T59	ALDER	16	0.5	8		
T60	FIR	8	1	8	8	
T61	ALDER	14	0.5	7		
T62	ALDER	12	0.5	6		
T63	HEM	10	1	10	10	
T64	ALDER	20	0.5	10		
T65	FIR	10	1	10	10	
T66	ALDER	16	0.5	8		
T67	ALDER	24	0.5	12		
T68	ALDER	16	0.5	8		
T69	ALDER	14	0.5	7		
T70	MAPLE	16	1	16	16	
T71	MAPLE	16	1	16	16	
T72	ALDER	12	0.5	6		
T73	ALDER	12	0.5	6		
T74	ALDER	12	0.5	6		
T75	ALDER	16	0.5	8		
T76	ALDER	12	0.5	6		
T77	ALDER	12	0.5	6		
T78	CHSTNUT	12	1	12	12	
T79	FIR	14	1	14	14	
T80	ALDER	14	0.5	7		
T81	MAPLE	18	1	18	18	
T82	ALDER	24	0.5	12		
T83	ALDER	12	0.5	6		
T84	ALDER	12	0.5	6		
T85	ALDER	12	0.5	6		
T86	ALDER	16	0.5	8		
T87	ALDER	14	0.5	7		
T88	ALDER	12	0.5	6		
T89	ALDER	22	0.5	11		
T90	ALDER	16	0.5	8		
T91	ALDER	20	0.5	10		
T92	ALDER	24	0.5	12		
T93	ALDER	18	0.5	9		
T94	ALDER	10	0.5	5		
T95	ALDER	20	0.5	10		
T96	ALDER	12	0.5	6		
T97	FIR	26	1	26	26	
T98	FIR	12	1	12	12	
T99	MAPLE	26	1	26	26	
T100	ALDER	14	0.5	7	7	

### Alamdari Property Tree Inventory Table

TREE	SPECIES	DIA	WT	WT'D DIA	SAVED	Notes
T101	ALDER		16	0.5	8	8
T102	ALDER		20	0.5	10	10
T103	ALDER		10	0.5	5	5
T104	ALDER		12	0.5	6	6
T105	ALDER		14	0.5	7	7
T106	FIR		10	1	10	10
T107	ALDER		14	0.5	7	7
T108	MAPLE		14	1	14	14
T109	ALDER		24	0.5	12	
T110	ALDER		22	0.5	11	
T111	ALDER		12	0.5	6	
T112	ALDER		18	0.5	9	
T113	ALDER		16	0.5	8	
T114	ALDER		16	0.5	8	
T115	ALDER		12	0.5	6	
T116	ALDER		8	0.5	4	
T117	ALDER		12	0.5	6	
T118	MAPLE		12	1	12	
T119	ALDER		12	0.5	6	
T120	FIR		8	1	8	
T121	<b>FIR</b>		8	1	8	
T122	ALDER		12	0.5	6	
T123	CHSTNUT		12	1	12	
T124	ALDER		14	0.5	7	
T125	<b>FIR</b>		18	1	18	18
T126	ALDER		14	0.5	7	
T127	ALDER					Septic drainfield trees. Trees 127, 128, 130, 131, 132 & 133 were cut down during the installation of the drainfield and were replaced by 18 conifer trees per COB requirement. Trees 129 & 134 were cut down prior to the purchase of the property by the Owner.
T128	ALDER					
T129	FIR					
T130	ALDER					
T131	HEM					
T132	MAPLE					
T133	FIR					
T134	FIR					
T135	ALDER		14	0.5	7	
T136	ALDER		12	0.5	6	
T137	ALDER		12	0.5	6	
T138	ALDER		12	0.5	6	
T139	ALDER		12	0.5	6	
T140	ALDER		12	0.5	6	
T141	<b>FIR</b>		8	1	8	
T142	ALDER		12	0.5	6	
T143	ALDER		14	0.5	7	
T144	ALDER		14	0.5	7	
T145	ALDER		14	0.5	7	
T146	ALDER		12	0.5	6	
T147	<b>FIR</b>		18	1	18	
T148	ALDER		12	0.5	6	
T149	<b>FIR</b>		18	1	18	
T150	<b>FIR</b>		24	1	24	

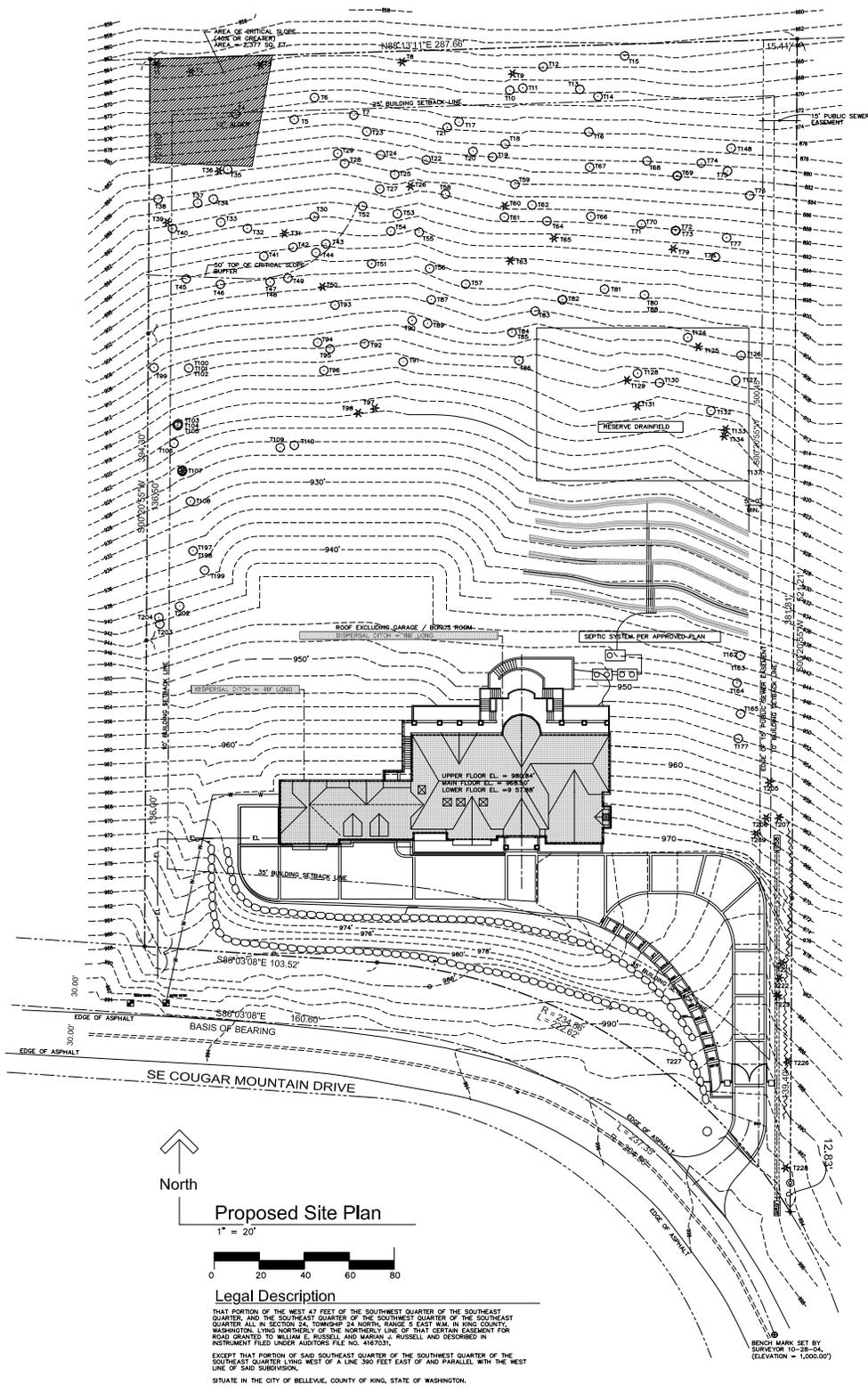
**Alamdari Property Tree Inventory Table**

TREE	SPECIES	DIA	WT	WT'D DIA	SAVED	Notes
T151	FIR		24	1	24	
T152	ALDER		12	0.5	6	
T153	ALDER		12	0.5	6	
T154	ALDER		12	0.5	6	
T155	ALDER		16	0.5	8	
T156	ALDER		12	0.5	6	
T157	FIR		10	1	10	
T158	FIR		14	1	14	
T159	FIR		14	1	14	
T160	ALDER		14	0.5	7	
T161	ALDER		12	0.5	6	
T162	ALDER		12	0.5	6	6
T163	ALDER		14	0.5	7	
T164	ALDER		12	0.5	6	6
T165	ALDER		12	0.5	6	6
T166	ALDER		14	0.5	7	
T167	ALDER		14	0.5	7	
T168	ALDER		12	0.5	6	
T169	ALDER		16	0.5	8	
T170	FIR		8	1	8	
T171	FIR		14	1	14	
T172	FIR		12	1	12	
T173	ALDER		12	0.5	6	
T174	ALDER		14	0.5	7	
T175	ALDER		12	0.5	6	
T176	ALDER		12	0.5	6	
T177	ALDER		12	0.5	6	6
T178	ALDER		12	0.5	6	
T179	FIR		28	1	28	
T180	FIR		10	1	10	
T181	FIR		12	1	12	
T182	FIR		30	1	30	
T183	FIR		18	1	18	
T184	FIR		10	1	10	
T185	FIR		32	1	32	
T186	FIR		10	1	10	
T187	FIR		8	1	8	
T188	FIR		32	1	32	
T189	FIR		10	1	10	
T190	FIR		8	1	8	
T191	FIR		20	1	20	
T192	FIR		18	1	18	
T193	ALDER		12	0.5	6	
T194	ALDER		14	0.5	7	
T195	FIR		10	1	10	
T196	ALDER		14	0.5	7	
T197	ALDER		12	0.5	6	6
T198	ALDER		14	0.5	7	7
T199	MAPLE		12	1	12	12
T200	FIR		22	1	22	22

**Alamdari Property Tree Inventory Table**

TREE	SPECIES	DIA	WT	WT'D DIA	SAVED	Notes
T201	FIR		20	1	20	20
T202	MAPLE		12	1	12	12
T203	MAPLE		18	1	18	18
T204	MAPLE		24	1	24	24
T205	FIR		10	1	10	10
T206	ALDER		14	0.5	7	
T207	FIR		10	1	10	10
T208	FIR		30	1	30	30
T209	FIR		10	1	10	10
T210	FIR		26	1	26	
T211	FIR		16	1	16	
T212	FIR		32	1	32	
T213	FIR		12	1	12	
T214	FIR		32	1	32	
T215	FIR		28	1	28	
T216	FIR		24	1	24	
T217	FIR		32	1	32	
T218	FIR		24	1	24	
T219	ALDER		14	0.5	7	
T220	FIR		32	1	32	
T221	FIR		18	1		Trees 221, 222, 223 & 226 are in the COB easement and were removed by the COB.
T222	FIR		24	1		
T223	FIR		22	1		
T224	FIR		24	1	24	
T225	FIR		18	1	18	
T226	FIR		24	1		See above.
T227	FIR		14	1	14	
T228	FIR		40	1	40	40
T229	CEDAR		16	1	16	

<b>Total Trees - DIA</b>	<b>2419</b>
<b>Trees Saved - DIA</b>	<b>849</b>
<b>Percentage Saved</b>	<b>35.1%</b>



North  
**Proposed Site Plan**  
 1" = 20'

**Legal Description**

THAT PORTION OF THE WEST 40 FEET OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, ALL IN SECTION 24, TOWNSHIP 24 NORTH, RANGE 5 EAST 114M, IN KING COUNTY, WASHINGTON, LYING NORTHERLY OF THE NORTHERLY LINE OF THAT CERTAIN EASEMENT FOR ROAD GRANTED TO WILLIAM E. RUSSELL AND MARION J. RUSSELL AND DESCRIBED IN INSTRUMENT FILED UNDER AUDITORS FILE NO. 4167031.

EXCEPT THAT PORTION OF SAID SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, LING WEST OF A LINE 300 FEET EAST OF AND PARALLEL WITH THE WEST LINE OF SAID SUBDIVISION.

SITUATE IN THE CITY OF BELLEVUE, COUNTY OF KING, STATE OF WASHINGTON.

BENCH MARK SET BY SURVEYOR 10-28-84 (ELEVATION = 1,006.00')







**Restoration Logistics, LLC**  
**Ecological Solutions**

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Seattle, WA 98118  
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Phone: 206-861-8398  
Fax: 206-861-0125  
info@restlog.com

DATE: April 15, 2010

TO: Dr. Farshad Alamdari

FROM: Colin Macdonald, Principal, Restoration Logistics

PROJECT: Proposed Alder Removal at 17630 SE Cougar Mountain Dr, Bellevue, WA

SUBJECT: Wildlife Habitat Assessment

## **INTRODUCTION**

This document addresses habitat assessment on the property owned by Dr. Farshad Alamdari (The Owner). The property is located in the Cougar Mountain area and a single-family residence is presently under construction on the southern part of the property.

The Owner wishes to fell, and in most cases remove, the alder trees on the subject property in order to allow him access to his backyard area for passive recreational use. He has concerns about the hazard posed by some of these mature trees as he is planning on having a walking trail through the area for his family's enjoyment. He also wishes to transition the dominant tree cover towards evergreen species as well as increase the variety of native shrubs, particularly of fruit bearing species for aesthetic reasons as well as to attract birds. Although the tree retention plan submitted by The Owner meets the City of Bellevue's standards, the City of Bellevue informed The Owner by email on October 23, 2008 that in order to continue with his permit, a Habitat Study would be required due to the forested nature of his property. The Owner engaged Restoration Logistics<sup>1</sup> to perform this study.

### **Scope of Services**

The scope of services includes document review, a field visit to inspect the property, and the preparation of this report. Documents reviewed include: the site development plan, tree retention plan, communications with City of Bellevue staff, relevant city codes as well as relevant city, county and state sensitive area and wildlife habitat information. The site was inspected by Colin Macdonald<sup>2</sup> of Restoration Logistics on February 23, 2010.

To the extent that this report identifies or describes critical areas on the property, these activities are done at a reconnaissance level; boundaries of critical areas and their buffers were not delineated, and the sub-type or classification of the critical areas is suggested but not stated. Functional assessment was not done and this document should not be construed as formal or legal description of any critical areas on the property.

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<sup>1</sup> Restoration Logistics has over ten years experience providing ecological services in the Puget Sound region [www.restlog.com](http://www.restlog.com).

<sup>2</sup> Colin Macdonald (Principal) with degree in Biology has many years of experience in environmental science, ecological restoration, wildlife and habitat assessments.

## **Study Area**

A vicinity map locating the property is attached to this report. The study area is the “backyard” area to the north of the clearing limits for the new house, presently under construction. This area is roughly the northern third of the lot and is approximately 1.1 acres in size. The proposed site plan including the tree inventory is on sheet A-1 of the Alamdari Residence plan set, an annotated copy of which is attached to this report.

## **FINDINGS**

### **Landscape position (see vicinity map)**

The property is located on the north side of Cougar Mountain and although it is in the City of Bellevue, the adjoining properties to the east and west remain in unincorporated King County along with most of the properties across SE Cougar Mountain Dr to the south. Zoning in the area is R-1 (either King County or City of Bellevue). The Anti-Aircraft Peak entrance to the 3100-acre Cougar Mountain Regional Wildland Park is just down the road from the subject property.

The property is on the suburban fringe around Cougar Mountain Regional Wildland Park, and it and many of the nearby properties have remained substantially forested. The remaining forested habitat on the subject property is connected to the forested areas of the adjacent properties and through them to the whole of Cougar Mountain Regional Wildland Park, a large area of diverse habitats supporting a variety of wildlife. As you move away from the park boundary, parcel size decreases, developed area increases, and the habitat becomes increasingly fragmented.

Disturbance (clearing) also increases and earlier successional stage red alder stands and brushy areas begin breaking up the mature second growth forest.

### **Vegetation**

The entire study area is one habitat type: second growth Douglas-fir / red alder forest with a sword fern / Oregon grape understory. There are a few big-leaf maples and western hemlocks mixed in the canopy layer and a handful of other species in the shrub layer. Table 1 shows the full list of the vascular plant species found on-site.

Distribution of the species on-site is fairly uniform, although the largest and oldest Douglas-fir trees are found along the north property line. As is common in disturbed and second growth forests in the Puget Sound lowlands, conifer regeneration is suppressed. No conifer seedlings were found on-site; the youngest coniferous tree is a 4-inch DBH pole probably greater than 12 years in age. There is also not much of a mid-canopy layer to the vegetation community. The alder stand is mostly composed of mature and in some cases, senescent, trees. The older trees exhibit the arboricultural faults typical to this species as they age: split-trunks, broken tops, and general decay. There are several standing dead trees, or snags. Many of the alder are leaning downslope. Since the southern portion of the property was cleared to construct the house, two trees have fallen, a large red-alder and a hemlock snag. More trees, particularly aged alders that were in the interior but are now on the forest edge, might be expected to fall when exposed to seasonal windstorms.

Fortunately, colonization by non-native invasive species is light. Herb Robert, a groundcover species widespread in King County, was occasionally seen in small clusters, and at one location on the eastern property line, Himalayan blackberry is encroaching from a larger patch on the adjacent property.

**Table 1: Vascular Plant Species at the Alamdari Residence**

Species	Botanical Name	Non-native
<b>TREES</b>		
Red Alder*	<i>Alnus rubra</i>	
Douglas Fir	<i>Pseudotsuga menziesii</i>	
Big Leaf Maple	<i>Acer macrophyllum</i>	
Western Hemlock	<i>Tsuga heterophylla</i>	
<b>SHRUBS</b>		
Sword fern*	<i>Polystichum munitum</i>	
Tall Oregon grape*	<i>Mahonia aquifolium</i>	
Salmonberry	<i>Rubus spectabilis</i>	
Devil's club	<i>Oplopanax horridus</i>	
Red huckleberry	<i>Vaccinium parvifolium</i>	
Red elderberry	<i>Sambucus racemosa</i>	
Himalayan blackberry	<i>Rubus armenianus</i>	x
Indian Plum	<i>Oemleria cerasiformis</i>	
Blackcap	<i>Rubus leucodermis</i>	
<b>GROUNDCOVER</b>		
Stinging nettle	<i>Urtica dioica</i>	
Bedstraw	<i>Gallium triflorum</i>	
Bleeding heart	<i>Dicentra formosa</i>	
Herb Robert	<i>Geranium robertianum</i>	x
Siberian miner's lettuce	<i>Claytonia sibirica</i>	

Species are listed in rough order of abundance, those with a \* were estimated at greater than 20% cover

### Critical Areas

There are no mapped City or County critical areas on the property. The nearest mapped sensitive area is a small unclassified stream over 400 ft northwest of the property. No sensitive areas were observed on the property during the site visit. Although the northwest corner has been described as a steep slope, I believe this is a borderline case at best; using an inclinometer and taking several readings I recorded an average grade of 37 or 38%, just under the 40% threshold. The study area as a whole is an even 35% north facing slope. No erosion, slumping, or other soil movement issues were observed.

### Wildlife Habitat

The forested portion of this property provides habitat for the common woodland species of the Puget Sound lowlands. Since the site visit was conducted at mid-day in February, very little wildlife was directly observed, but it seems certain that mice, voles, squirrels, raccoons and other small mammals are present as well as larger species such as deer, bobcat and coyotes. Deer droppings were ubiquitous. The connection to Cougar Mountain Regional Wildland Park even allows for the possibility of black bear. The site offers potential cover, foraging and even breeding habitat for a variety of bird species, including migratory songbirds.

Being in an upland location far from any wetlands, rivers or large bodies of water, the site could not provide primary or even secondary habitat for the fish, reptiles, amphibians and many of the birds on the City of Bellevue's list of Species of Local Importance. As expected, an examination of WDFW bald eagle (*Haliaeetus leucocephalus*) data reveals no active territories in the vicinity and no nesting sites were observed on the property or nearby. A recent literature review of urban wildlife habitat concluded that only ten of the 23 species of local importance can reasonably be

expected to occur with City of Bellevue limits (Watershed Company, 2009). Of these ten species, this property only has the possibility of providing primary habitat for two species of local importance: red-tailed hawk (*Buteo jamaicensis*) and pileated woodpecker (*Dryocopus pileatus*).

Although the Vaux's swift (*Chaetura vauxi*) could potentially forage in the area (overhead, as they are strictly aerial feeders), breeding is unlikely because nesting is known to occur in large snags (x = 27 inches DBH) in mature or old growth coniferous forest (Lewis et al. 2002).

The pileated woodpecker is more likely to use forested habitat on the property directly, both for foraging and transit although for breeding they too are associated with mature and old growth coniferous forests (Lewis et al. 2003).

In contrast, the red-tailed hawk is negatively correlated with mature unbroken forest habitat, but this property does not provide ideal habitat for this species either as they prefer to locate near wide fields and other open areas suited to their hunting style (Preston *et al*, 2009).

In conclusion, the property offers wildlife habitat for common species, including, because of its relatively good connection to a large patch of high quality habitat (Cougar Mountain Regional Wildland Park), species that are uncommon in urban environments due to territorial size requirements. It does not likely offer primary habitat for any Species of Local Importance, although it may offer some foraging habitat and indirect support to a few of these species to the degree to which their prey are supported by the habitat on the property.

## **IMPACT OF PROPOSED ACTIVITIES ON HABITAT**

Most of the red alder in the study area are to be removed, but the tree retention plan has been revised to retain eleven more trees than previously, and further, four of the trees to be removed will be wildlife snagged (see below). The revised retention plan is attached. This revision will result in an increase of the percentage of trees retained by diameter to 34%, which is greater than required by City of Bellevue Municipal Code.

Although this tree removal is a form of habitat alteration, red alder is an early successional forest species, and with this stand being relatively mature, its life span on the property has a natural limit. All of the big-leaf maples and conifers in the study area will be retained, as well as the existing understory native shrub and groundcover plant community, ensuring that the residence's "backyard" will remain natural habitat. The proposed tree removals are not expected to adversely impact any Species of Local Importance.

Effort will be taken in the course of removing the trees to minimize disturbance to the surrounding soil and other native plants. Some of the native plants to be installed (see below) may be used to restore any damage caused by the equipment used to remove the trees. Many of the trees along the north property line will be felled by chainsaw and left on the ground so as not to require heavy equipment to access that area.

## **HABITAT ENHANCEMENT ACTIVITIES**

The Owner values the natural habitat on the property, and plans on taking action to protect and enhance it. The following activities are not proposed as mitigation for the red alder removals, but are provided here as an indication of his intentions.

### **Wildlife Snags and Nurse Logs**

The Owner is proposing to wildlife snag four of the red alders in the lower area of the property, creating key breeding and foraging habitat features for many wildlife species. Of the trees to be

felled, a reasonable percentage of the downed tree material will be left on the ground to decay providing habitat value and returning nutrients to the soil. Some of the trees will have to be removed entirely, as The Owner does not wish to create an impassable slash pile that would interfere with his family's ability to access and enjoy their property.

**Non-native Invasive species control**

The Owner recognizes the threat posed by invasive plant species, and plans on controlling and as much as possible removing these plants from his property. Since the site is relatively free of invasive species infestations this task will not be too difficult, but on the other hand very important because it is much better to deal with small infestations expeditiously than waiting to control a larger colony later. The Herb Robert is the least damaging of the non-native species and is not outcompeting the native groundcover onsite so it will be monitored but not targeted for control. The Himalayan blackberry encroachment on the east property line, however, will be completely removed. The Owner will also approach his neighbor and seek permission to preemptively remove at least the blackberry closest to his property.

**Native Plantings**

The Owner is planning on installing additional native plants in the subject area to enhance both its aesthetic and ecological value (Table 2). A conifer underplanting is a key component of this plan, and is often a proposed treatment in second growth forested areas with limited conifer recruitment such as found on this property. The owner is also interested in planting a variety of fruiting shrubs to attract birds.

**Table 2: Recommended Species for Enhancement Planting, Alamdari Residence**

Species	Botanical Name
<b>TREES</b>	
W. Flowering Dogwood	Cornus nuttallii
Bitter Cherry	Prunus emarginata
Douglas Fir	Pseudotsuga menziesii
<b>SHRUBS</b>	
Vine Maple	Acer circinatum
Beaked Hazlenut	Corylus cornuta
Ocean Spray	Holodiscus discolor
Red-flowering currant	Ribes sanguineum
Baldhip rose	Rosa gymnocarpa
Thimbleberry	Rubus parviflorus
Snowberry	Symphoricarpos albus

Please let me know if I can provide any further assistance.

Sincerely,



Colin Macdonald

## REFERENCES

- The Watershed Company. 21 May 2009. Bellevue Urban Nature Wildlife Habitat Literature Review.
- Lewis, J.C. and J.M. Azerrad. 2003. Pileated Woodpecker. Pages 29-1 – 29-9 *in* E. Larsen, J.M. Azerrad, and N. Nordstrom, editors. Management Recommendations for Washington's Priority Species. Vol IV: Birds. Washington Department of Fish and Wildlife, Olympia, WA.
- Lewis, J.C., M. Whalen, and R.L. Milner. 2002. Vaux's swift. Pages 25-1 – 25-5 *in* E. Larsen, J.M. Azerrad, and N. Nordstrom, editors. Management Recommendations for Washington's Priority Species. Vol IV: Birds. Washington Department of Fish and Wildlife, Olympia, WA.
- Preston, C. R. and R. D. Beane. 2009. Red-tailed Hawk (*Buteo jamaicensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/052>



**Conditions of Fire Approval**  
 Sprinklers are required per IFC 903.506.  
 1. Demolition and construction shall conform to the requirements of International Fire Code, chapter 14.  
 2. Automatic sprinklers designed in accordance with NFPA 13B and Bellevue Fire Department Standards.  
 Provide a minimum 1" meter connection for the automatic sprinkler system.  
 4. The sprinkler water flow switch shall be interconnected to the 110 volt smoke detector.  
 5. Gates must comply with Bellevue Fire Code chapter 5 and Bellevue Fire Department Standards, section 3.

**Notice to Architect and Sprinkler Designer**  
 The size of the water meter and tap to the main shall increase to a minimum 1.5 inch if the sprinkler demand exceeds 30 gallons per minute and the future cover exceeds 60 inches.

**Tree Inventory**

OR \* DENOTES EXISTING TREE TO BE REMAIN  
 OR \* DENOTES EXISTING TREE TO BE REMOVED

TREE SPECIES	DIA	HEIGHT	DBH	HEALTH	REMARKS
T1	FIR	26"	10'	26"	26"
T2	FIR	28"	10'	28"	28"
T3	FIR	38"	12'	38"	38"
T4	ALDER	12"	6'	6"	6"
T5	ALDER	20"	10'	10'	10'
T6	ALDER	12"	6'	6"	6"
T7	ALDER	12"	6'	6"	6"
T8	FIR	26"	10'	26"	26"
T9	HEM.	8"	8'	8"	8"
T10	ALDER	12"	6'	6"	6"
T11	HEM.	18"	9'	9"	9"
T12	ALDER	12"	6'	6"	6"
T13	ALDER	14"	7'	7"	7"
T14	ALDER	14"	7'	7"	7"
T15	ALDER	15"	8'	8"	8"
T16	ALDER	22"	11'	11'	11'
T17	ALDER	13"	7'	7"	7"
T18	ALDER	20"	10'	10'	10'
T19	ALDER	14"	7'	7"	7"
T20	ALDER	14"	7'	7"	7"
T21	MAPLE	14"	7'	7"	7"
T22	ALDER	20"	10'	10'	10'
T23	ALDER	20"	10'	10'	10'
T24	ALDER	14"	7'	7"	7"
T25	ALDER	14"	7'	7"	7"
T26	FIR	8"	8'	8"	8"
T27	ALDER	12"	6'	6"	6"
T28	ALDER	14"	7'	7"	7"
T29	ALDER	14"	7'	7"	7"
T30	ALDER	14"	7'	7"	7"
T31	FIR	14"	7'	7"	7"
T32	ALDER	12"	6'	6"	6"
T33	ALDER	18"	9'	9"	9"
T34	ALDER	14"	7'	7"	7"
T35	ALDER	18"	9'	9"	9"
T36	HEM.	10"	10'	10'	10'
T37	ALDER	16"	8'	8"	8"
T38	ALDER	14"	7'	7"	7"
T39	FIR	10"	10'	10'	10'
T40	ALDER	14"	7'	7"	7"
T41	ALDER	14"	7'	7"	7"
T42	ALDER	14"	7'	7"	7"
T43	ALDER	14"	7'	7"	7"
T44	ALDER	16"	8'	8"	8"
T45	ALDER	18"	9'	9"	9"
T46	ALDER	22"	11'	11'	11'
T47	ALDER	14"	7'	7"	7"
T48	ALDER	14"	7'	7"	7"
T49	ALDER	16"	8'	8"	8"
T50	FIR	10"	10'	10'	10'
T51	ALDER	16"	8'	8"	8"
T52	ALDER	14"	7'	7"	7"
T53	ALDER	12"	6'	6"	6"
T54	ALDER	14"	7'	7"	7"
T55	ALDER	12"	6'	6"	6"
T56	ALDER	16"	8'	8"	8"
T57	ALDER	20"	10'	10'	10'
T58	ALDER	16"	8'	8"	8"
T59	ALDER	16"	8'	8"	8"
T60	FIR	8"	8'	8"	8"
T61	ALDER	14"	7'	7"	7"
T62	ALDER	12"	6'	6"	6"
T63	HEM.	10"	10'	10'	10'
T64	ALDER	20"	10'	10'	10'
T65	FIR	10"	10'	10'	10'
T66	ALDER	16"	8'	8"	8"
T67	ALDER	24"	12'	12'	12'
T68	ALDER	16"	8'	8"	8"
T69	ALDER	14"	7'	7"	7"
T70	MAPLE	16"	8'	8"	8"
T71	MAPLE	16"	8'	8"	8"
T72	ALDER	12"	6'	6"	6"
T73	ALDER	12"	6'	6"	6"
T74	ALDER	12"	6'	6"	6"
T75	ALDER	16"	8'	8"	8"
T76	ALDER	16"	8'	8"	8"
T77	ALDER	12"	6'	6"	6"
T78	CHENT	12"	12'	12'	12'
T79	MAPLE	14"	14'	14'	14'
T80	ALDER	14"	7'	7"	7"
T81	MAPLE	18"	18'	18'	18'
T82	MAPLE	12"	12'	12'	12'
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T86	ALDER	16"	8'	8"	8"
T87	ALDER	14"	7'	7"	7"
T88	ALDER	12"	6'	6"	6"
T89	ALDER	22"	11'	11'	11'
T90	ALDER	16"	8'	8"	8"
T91	ALDER	20"	10'	10'	10'
T92	ALDER	24"	12'	12'	12'
T93	ALDER	12"	6'	6"	6"
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T95	ALDER	20"	10'	10'	10'
T96	ALDER	12"	6'	6"	6"
T97	ALDER	26"	26'	26'	26'
T98	FIR	12"	12'	12'	12'
T99	MAPLE	28"	28'	28'	28'
T100	ALDER	14"	7'	7"	7"
T101	ALDER	16"	8'	8"	8"
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T106	FIR	10"	10'	10'	10'
T107	ALDER	14"	7'	7"	7"
T108	MAPLE	14"	14'	14'	14'
T109	ALDER	24"	24'	24'	24'
T110	ALDER	22"	22'	22'	22'
T111	ALDER	12"	6'	6"	6"
T112	ALDER	18"	9'	9"	9"
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T123	FIR	22"	22'	22'	22'
T124	ALDER	16"	8'	8"	8"
T125	FIR	14"	14'	14'	14'
T126	FIR	40"	40'	40'	40'
T127	CEDAR	16"	16'	16'	16'
T128	ALDER	12"	6'	6"	6"
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T244	ALDER	14"	7'	7"	7"
T245	ALDER	14"	7'	7"	7"
T246	ALDER	14"	7'	7"	7"
T247	ALDER	14"	7'	7"	7"
T248	ALDER	14"	7'	7"	7"
T249	ALDER	14"	7'	7"	7"
T250	ALDER	14"	7'	7"	7"
T251	ALDER	14"	7'	7"	7"
T252	ALDER	14"	7'	7"	7"
T253	ALDER	14"	7'	7"	7"
T254	ALDER	14"	7'	7"	7"
T255	ALDER	14"	7'	7"	7"
T256	ALDER	14"	7'	7"	7"
T257	ALDER	14"	7'	7"	7"
T258	ALDER	14"	7'	7"	7"
T259	ALDER	14"	7'	7"	7"
T260	ALDER	14"	7'	7"	7"
T261	ALDER	14"	7'	7"	7"
T262	ALDER	14"	7'	7"	7"
T263	ALDER	14"	7'	7"	7"
T264	ALDER	14"	7'	7"	7"
T265	ALDER	14"	7'	7"	7"
T266	ALDER	14"	7'		

TREE RETENTION PLAN: Alamdari Residence, 17630 Cougar Mtn Dr.

Changes from earlier retention plan are highlighted yellow.

Plan S=1 R=0	Tree No.	Species	DIA.	Weight Factor	Weighted DIA	Tree Saved	Schedule
1	1	Fir	26	1	26	26	Saved
1	2	Fir	28	1	28	28	Saved
1	3	Fir	38	1	38	38	Saved
1	4	Alder	12	0.5	6	6	Saved
0	5	Alder	20	0.5	10	0	Wildlife Snag
0	6	Alder	12	0.5	6	0	To be removed
0	7	Alder	20	0.5	10	0	To be removed
1	8	Fir	36	1	36	36	Saved
1	9	Hem	8	1	8	8	Saved
1	10	Alder	12	0.5	6	6	Saved
1	11	Alder	18	0.5	9	9	Saved
1	12	Alder	12	0.5	6	6	Saved
1	13	Alder	14	0.5	7	7	Saved
0	14	Alder	14	0.5	7	0	To be removed
0	15	Alder	15	0.5	7.5	0	Wildlife Snag
0	16	Alder	22	0.5	11	0	Wildlife Snag
1	17	Alder	13	0.5	6.5	6.5	Saved
0	18	Alder	20	0.5	10	0	To be removed
0	19	Alder	14	0.5	7	0	To be removed
0	20	Alder	20	0.5	10	0	To be removed
1	21	Maple	16	1	16	16	Saved
0	22	Alder	20	0.5	10	0	To be removed
0	23	Alder	20	0.5	10	0	To be removed
0	24	Alder	14	0.5	7	0	To be removed
0	25	Alder	14	0.5	7	0	To be removed
1	26	Fir	8	1	8	8	Saved
0	27	Alder	12	0.5	6	0	To be removed
0	28	Alder	14	0.5	7	0	To be removed
0	29	Alder	14	0.5	7	0	To be removed
0	30	Alder	14	0.5	7	0	To be removed
1	31	Fir	14	1	14	14	Saved
1	32	Alder	12	0.5	6	6	Saved
1	33	Alder	18	0.5	9	9	Saved
1	34	Alder	14	0.5	7	7	Saved
1	35	Alder	18	0.5	9	9	Saved
1	36	Hem	10	1	10	10	Saved
1	37	Alder	16	0.5	8	8	Saved
1	38	Alder	14	0.5	7	7	Saved
1	39	Fir	16	1	16	16	Saved
1	40	Alder	14	0.5	7	7	Saved
0	41	Alder	16	0.5	8	0	To be removed
0	42	Alder	14	0.5	7	0	To be removed
0	43	Alder	14	0.5	7	0	To be removed
0	44	Alder	16	0.5	8	0	To be removed
1	45	Alder	28	0.5	14	14	Saved
0	46	Alder	22	0.5	11	0	Wildlife Snag

TREE RETENTION PLAN: Alamdari Residence, 17630 Cougar Mtn Dr.

Plan	Tree	Species	DIA.	Weight	Weighted	Tree	Schedule
S=1 R=0	No.			Factor	DIA	Saved	
0	47	Alder	14	0.5	7	0	To be removed
0	48	Alder	14	0.5	7	0	To be removed
0	49	Alder	16	0.5	8	0	To be removed
1	50	Fir	10	1	10	10	Saved
0	51	Alder	16	0.5	8	0	To be removed
0	52	Alder	14	0.5	7	0	To be removed
0	53	Alder	12	0.5	6	0	To be removed
0	54	Alder	14	0.5	7	0	To be removed
0	55	Alder	12	0.5	6	0	To be removed
0	56	Alder	16	0.5	8	0	To be removed
0	57	Alder	20	0.5	10	0	To be removed
0	58	Alder	16	0.5	8	0	To be removed
0	59	Alder	16	0.5	8	0	To be removed
1	60	Fir	8	1	8	8	Saved
0	61	Alder	14	0.5	7	0	To be removed
0	62	Alder	12	0.5	6	0	To be removed
1	63	Hem	10	1	10	10	Saved
0	64	Alder	20	0.5	10	0	To be removed
1	65	Fir	10	1	10	10	Saved
0	66	Alder	16	0.5	8	0	To be removed
0	67	Alder	24	0.5	12	0	To be removed
0	68	Alder	16	0.5	8	0	To be removed
0	69	Alder	14	0.5	7	0	To be removed
1	70	Maple	16	1	16	16	Saved
1	71	Maple	16	1	16	16	Saved
0	72	Alder	12	0.5	6	0	To be removed
0	73	Alder	12	0.5	6	0	To be removed
0	74	Alder	12	0.5	6	0	To be removed
0	75	Alder	16	0.5	8	0	To be removed
0	76	Alder	12	0.5	6	0	To be removed
0	77	Alder	12	0.5	6	0	To be removed
1	78	Chest	12	1	12	12	Saved
1	79	Fir	14	1	14	14	Saved
0	80	Alder	14	0.5	7	0	To be removed
0	81	Maple	18	1	18	0	Removed
0	82	Alder	24	0.5	12	0	To be removed
0	83	Alder	12	0.5	6	0	To be removed
0	84	Alder	12	0.5	6	0	To be removed
0	85	Alder	12	0.5	6	0	To be removed
0	86	Alder	16	0.5	8	0	To be removed
0	87	Alder	14	0.5	7	0	To be removed
0	88	Alder	12	0.5	6	0	To be removed
0	89	Alder	22	0.5	11	0	To be removed
0	90	Alder	16	0.5	8	0	To be removed
0	91	Alder	20	0.5	10	0	To be removed
0	92	Alder	24	0.5	12	0	To be removed
0	93	Alder	18	0.5	9	0	To be removed
0	94	Alder	10	0.5	5	0	To be removed

TREE RETENTION PLAN: Alamdari Residence, 17630 Cougar Mtn Dr.

Plan S=1 R=0	Tree No.	Species	DIA.	Weight Factor	Weighted DIA	Tree Saved	Schedule
0	95	Alder	20	0.5	10	0	To be removed
0	96	Alder	12	0.5	6	0	To be removed
1	97	Fir	26	1	26	26	Saved
1	98	Fir	12	1	12	12	Saved
1	99	Maple	26	1	26	26	Saved
0	100	Alder	14	0.5	7	0	To be removed
0	101	Alder	16	0.5	8	0	To be removed
0	102	Alder	20	0.5	10	0	To be removed
0	103	Alder	10	0.5	5	0	To be removed
0	104	Alder	12	0.5	6	0	To be removed
1	105	Alder	14	0.5	7	7	Saved
1	106	Fir	10	1	10	10	Saved
1	107	Alder	14	0.5	7	7	Saved
1	108	Maple	14	1	14	14	Saved
0	109	Alder	24	0.5	12	0	To be removed
0	110	Alder	22	0.5	11	0	To be removed
0	111	Alder	12	0.5	6	0	Removed
0	112	Alder	18	0.5	9	0	Removed
0	113	Alder	16	0.5	8	0	Removed
0	114	Alder	16	0.5	8	0	Removed
0	115	Alder	12	0.5	6	0	Removed
0	116	Alder	8	0.5	4	0	Removed
0	117	Alder	12	0.5	6	0	Removed
0	118	Maple	12	1	12	0	Removed
0	119	Alder	12	0.5	6	0	Removed
0	120	Fir	8	1	8	0	Removed
0	121	Fir	8	1	8	0	Removed
0	122	Alder	12	0.5	6	0	Removed
0	123	Chest	12	1	12	0	Removed
0	124	Alder	14	0.5	7	0	To be removed
1	125	Fir	18	1	18	18	Saved
1	126	Alder	14	0.5	7	7	Saved
1	127	Alder	20	0.5	10	10	Saved
0	128	Alder	14	0.5	7	0	To be removed
1	129	Fir	12	1	12	12	Saved
0	130	Alder	14	0.5	7	0	To be removed
1	131	Hem	12	1	12	12	Saved
1	132	Maple	12	1	12	12	Saved
1	133	Fir	12	1	12	12	Saved
1	134	Fir	20	1	20	20	Saved
0	135	Alder	14	0.5	7	0	Removed
0	136	Alder	12	0.5	6	0	Removed
0	137	Alder	12	0.5	6	0	Removed
0	138	Alder	12	0.5	6	0	Removed
0	139	Alder	12	0.5	6	0	Removed
0	140	Alder	12	0.5	6	0	Removed
0	141	Fir	8	1	8	0	Removed
0	142	Alder	12	0.5	6	0	Removed

TREE RETENTION PLAN: Alamdari Residence, 17630 Cougar Mtn Dr.

Plan S=1 R=0	Tree No.	Species	DIA.	Weight Factor	Weighted DIA	Tree Saved	Schedule
0	143	Alder	14	0.5	7	0	Removed
0	144	Alder	14	0.5	7	0	Removed
0	145	Alder	14	0.5	7	0	Removed
0	146	Alder	12	0.5	6	0	Removed
0	147	Fir	18	1	18	0	Removed
0	148	Alder	12	0.5	6	0	Removed
0	149	Fir	18	1	18	0	Removed
0	150	Fir	24	1	24	0	Removed
0	151	Fir	24	1	24	0	Removed
0	152	Alder	12	0.5	6	0	Removed
0	153	Alder	12	0.5	6	0	Removed
0	154	Alder	12	0.5	6	0	Removed
0	155	Alder	16	0.5	8	0	Removed
0	156	Alder	12	0.5	6	0	Removed
0	157	Fir	10	1	10	0	Removed
0	158	Fir	14	1	14	0	Removed
0	159	Fir	14	1	14	0	Removed
0	160	Alder	14	0.5	7	0	Removed
0	161	Alder	12	0.5	6	0	Removed
0	162	Alder	12	0.5	6	0	To be removed
0	163	Alder	14	0.5	7	0	Removed
0	164	Alder	12	0.5	6	0	To be removed
0	165	Alder	12	0.5	6	0	To be removed
0	166	Alder	14	0.5	7	0	Removed
0	167	Alder	14	0.5	7	0	Removed
0	168	Alder	12	0.5	6	0	Removed
0	169	Alder	16	0.5	8	0	Removed
0	170	Fir	8	1	8	0	Removed
0	171	Fir	14	1	14	0	Removed
0	172	Fir	12	1	12	0	Removed
0	173	Alder	12	0.5	6	0	Removed
0	174	Alder	14	0.5	7	0	Removed
0	175	Alder	12	0.5	6	0	Removed
0	176	Alder	12	0.5	6	0	Removed
0	177	Alder	12	0.5	6	0	To be removed
0	178	Alder	12	0.5	6	0	Removed
0	179	Fir	29	1	29	0	Removed
0	180	Fir	10	1	10	0	Removed
0	181	Fir	12	1	12	0	Removed
0	182	Fir	30	1	30	0	Removed
0	183	Fir	18	1	18	0	Removed
0	184	Fir	10	1	10	0	Removed
0	185	Fir	32	1	32	0	Removed
0	186	Fir	10	1	10	0	Removed
0	187	Fir	8	1	8	0	Removed
0	188	Fir	32	1	32	0	Removed
0	189	Fir	10	1	10	0	Removed
0	190	Fir	8	1	8	0	Removed

TREE RETENTION PLAN: Alamdari Residence, 17630 Cougar Mtn Dr.

Plan S=1 R=0	Tree No.	Species	DIA.	Weight Factor	Weighted DIA	Tree Saved	Schedule
0	191	Fir	20	1	20	0	Removed
0	192	Fir	18	1	18	0	Removed
0	193	Alder	12	0.5	6	0	Removed
0	194	Alder	14	0.5	7	0	Removed
0	195	Fir	10	1	10	0	Removed
0	196	Alder	14	0.5	7	0	Removed
0	197	Alder	12	0.5	6	0	To be removed
0	198	Alder	14	0.5	7	0	To be removed
1	199	Maple	12	1	12	12	Saved
0	200	Fir	22	1	22	0	Removed
0	201	Fir	20	1	20	0	Removed
1	202	Maple	12	1	12	12	Saved
1	203	Maple	18	1	18	18	Saved
1	204	Maple	24	1	24	24	Saved
1	205	Fir	10	1	10	10	Saved
0	206	Alder	14	0.5	7	0	Removed
1	207	Fir	10	1	10	10	Saved
1	208	Fir	30	1	30	30	Saved
1	209	Fir	10	1	10	10	Saved
0	210	Fir	26	1	26	0	Removed
0	211	Fir	16	1	16	0	Removed
0	212	Fir	32	1	32	0	Removed
0	213	Fir	12	1	12	0	Removed
0	214	Fir	32	1	32	0	Removed
0	215	Fir	28	1	28	0	Removed
0	216	Fir	24	1	24	0	Removed
0	217	Fir	32	1	32	0	Removed
0	218	Fir	24	1	24	0	Removed
0	219	Alder	14	0.5	7	0	Removed
0	220	Fir	32	1	32	0	Removed
1	221	Fir	18	1	18	18	Saved
1	222	Fir	24	1	24	24	Saved
1	223	Fir	22	1	22	22	Saved
0	224	Fir	24	1	24	0	Removed
0	225	Fir	18	1	18	0	Removed
1	226	Fir	24	1	24	24	Saved
0	227	Fir	14	1	14	0	Removed
1	228	Fir	40	1	40	40	Saved
1	229	Cedar	16	1	16	16	Saved

**Total Diameter Trees: 2606**  
**Total Diameter Trees Saved: 878.5**  
**Percentage of Trees Diameter Saved: 34%**