

Hanson Family Forest Conservation Activity Plan

# of acres plan covers:	69.4
County and state:	King, WA
Forest certification number:	
USDA Farm & Tract #:	Farm: 1006 Tract: 1190
Date plan prepared:	October, 2012
Plan Preparers	
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Signatures	
Date:	Date:
Kirk Hanson Northwest Certified Forestry	Forest Owner

This plan meets the requirements of the Washington Specification Guide for the NRCS Conservation Activity Plan.

Date

Natural Resource Conservation Service

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Background and Site Information:

Legal Description:

Nearest City or Town:

Black Diamond, WA

Parcel Numbers:

Property Size

69.4

Date of Land Acquisition

August, 2011

Watershed

Ravensdale Creek

Tax Designation

The County Assessor currently classifies these parcels as "Forest land" under RCW 84.33.035(5). "Forest land" is synonymous with "designated forest land" and means any parcel of land that is twenty or more acres or multiple parcels of land that are contiguous and total twenty or more acres that is or are devoted primarily to growing and harvesting timber. Designated forest land means the land only and does not include a residential home site. The term includes land used for incidental uses that are compatible with the growing and harvesting of timber but no more than ten percent of the land may be used for such incidental uses. It also includes the land on which appurtenances necessary for the production, preparation, or sale of the timber products exist in conjunction with land producing these products.

LANDOWNERS OBJECTIVES

Short term

1. Conduct a light commercial thinning on merchantable age timber
2. Salvage log root rot pockets and replant with western red cedar
3. Interplant hardwood dominated wetlands and stream buffers with western red cedar and western hemlock
4. Remove Scotch broom from road margins
5. Install wildlife habitat structures such as habitat piles, constructed downed logs and bird nesting boxes
6. Reopen former skid road through center of western parcel

Long term

1. Manage forest as a family trust and for the beneficiaries of the trust
2. Produce revenue sufficient to cover operating costs of forest and provide periodic dividends to trust beneficiaries
3. Improve forest health through optimal stocking, increasing species diversity and mitigating pests & diseases
4. Manage forest for a mixed age and mixed species composition
5. Manage for optimal ecosystem functions, namely: ground water protection, carbon sequestration and wildlife habitat
6. Strive for economic resiliency by producing a diversity of timber and non-timber forest products

INTRODUCTORY OVERVIEW OF THE PROPERTY

Summary

This property is comprised of two tax parcels totaling 69.4 acres located approximately four miles northeast of the town of Black Diamond, WA. The property sits within a broad, shallow swale that drains west towards the Green River. The property is a former Weyerhaeuser plantation and is nearly entirely stocked with 26 year old Douglas-fir. Red alder, bitter cherry and cascara occur sporadically throughout the site. Shrub species and understory species include ocean spray, elderberry, sword fern, red huckleberry, Oregon grape and salal. A service road enters the property from the north at the dividing line between the two parcels and runs directly south before turning 90 degrees to the east midway through the property, then exits the property at the SE corner. A perennial stream and associated 6 acre wetland dominates the Northwest portion of the property and this area tends towards cottonwood, vine maple and willow. A 1.5 acre remnant patch of ~60 year old Douglas-fir, Western Hemlock, Western Red Cedar and Big Leaf Maple occupies the extreme northwest corner of the property on the other side of the stream.



Region

About 60 percent of the King County Area is woodland. Most of this acreage is privately owned. Small areas of woodland are held for residential and recreational sites and investment purposes. A few areas are managed primarily for wood crops. Although the soils of the Area have a high potential for production of wood crops, there is little intensive management of the woodland. The Area has several large and a number of small sawmills. Logs are sold for processing into a variety of wood products, including dimension lumber, furniture, pulp, plywood, utility poles, and fence posts. Large quantities of logs are also used for fireplace wood.

Although the native stands of trees were primarily conifers, at least half the woodland is now deciduous. Douglas-fir is the dominant conifer; western hemlock and western redcedar grow in smaller but significant numbers. The dominant deciduous tree is red alder, and there are small stands of big leaf maple. Black cottonwoods grow near streams. Red alder commonly invades logged-off areas and becomes dominant unless intensive management is applied or unless soil conditions are unfavorable for its establishment.

Climate

Most of the air masses that reach the area originate over the Pacific Ocean. The maritime air influences the climate throughout the year. The prevailing wind is from the southwest in fall and winter and gradually shifts to the northwest late in spring and in summer. There is a well-defined dry season in summer and a rainy season in winter. Annual precipitation increases from 35 inches in lowlands adjacent to Puget Sound to 150 inches or more on the wettest slopes of the Cascade Mountains. Snowfall ranges from less than 20 inches near Puget Sound to 400 inches on the higher slopes in the eastern part of the Area. Fifty percent of the annual precipitation falls from October through January and 75 percent from October through March. Total rainfall for July and August is less than 5 percent of the annual.

During the warmest months in summer, afternoon temperatures over the lowlands are in the 70's, decreasing to the 60's in the mountains. Temperatures can be expected to decrease 3 or 4 degrees with each increase of 1,000 feet in elevation. Maximum temperatures reach 85° to 90° F. on 5 to 15 days, and 100° F. has been recorded in the lowlands. The hottest weather and lowest relative humidity generally occur during brief periods when easterly winds blow.

In summer, the average relative humidity ranges from about 90 percent at sunrise to 50 percent in midafternoon. In winter, it ranges from 90 percent to 75 percent. Occasionally it may drop to 30 percent or less when dry easterly winds blow.

In winter, afternoon temperatures over the lowlands range from the lower 30's to the lower 40's and minimums from the mid-20's to the mid-30's. Below freezing temperatures are recorded on 30 to 90 nights depending on air drainage, distance from the Sound, and elevation (table 10). Almost every winter, minimums ranging from 10° to 20° F. are reported on a few nights, and below zero readings have been recorded in some localities. In the mountains, temperatures are below freezing on most nights between mid-October and April. The coldest weather occurs when the Pacific Northwest is under the influence of air from over the interior of the continent.

Maritime air that reaches the Washington coast late in fall and in winter is moist and is about the temperature of the ocean's surface. Orographic lifting and cooling of air masses moving inland causes cloudiness and variable precipitation (table 11). In the drier areas, annual precipitation 1 year in 10 has ranged from less than 25 to more than 40 inches, and on the wetter slopes of the Cascades, from less than 80 to more than 130 inches. Measurable precipitation (0.01 inch or more) is recorded on 4 to 8 days each month in summer, 10 to 15 days in fall and spring, and 20 to 25 days in winter.

During the wet season, rainfall is usually of light to moderate intensity and continuous over a period of time, rather than heavy downpours for brief intervals. Thunderstorms occur on 5 to 10 days each year, mostly in summer.

Most winter precipitation falls as rain at elevations below 1,500 feet, as rain or snow between 1,500 and 2,500 feet, and as snow at the higher elevations. Near the crest of the Cascades, snow can be expected in October, and it will remain on the ground from November until July. Snowfall ranges in depth from 10 to 30 inches over the lowlands, from 30 to 60 inches in valleys near the mountains and in the foothills, and from 300 to 400 inches on the higher ridges. In the mountains, density of the winter season snowpack increases from about 30 percent water early in winter to 45 percent in April. Snow depths at the higher elevations range from 75 to 150 inches in an average winter; it increases to 200 inches or more in seasons of heavier snowfall.

There are generally two periods of high stream flow each year. The major one occurs in fall and winter, coinciding with the season of heavy precipitation, and the other late in spring as the snowpack melts. Streams may rise above flood stage several times each rainy season.

Winds in this Area are influenced to some extent by topography. In general, the prevailing wind is from the south or southwest in winter and the west or northwest in summer. The strongest winds are from the southwest and occur as the more intense winter storms move inland. Extreme winds at 30 feet above the ground can be expected to exceed 55 miles per hour once in 2 years, 80 miles per hour once in 50 years, and 90 miles per hour once in 100 years.

Topography

The elevation of this property is approximately 725 feet above sea level. The topography is quite flat with little more than 60 feet of elevation gain from the west side to the east. The entire western half of the property occurs within a broad and very flat swale with an elevation of 710 feet and a topography that varies no more than 10 feet. The far eastern and southeastern portion of the property has significantly more topographical variation and wrinkles up to a high point of 770 feet in the south-central portion of the parcel and 775 feet along the railroad track bordering the eastern property line.

Surrounding land uses

The property to the north is a commercial timber plantation with well thinned approx. 30 year old Douglas-fir. The property to the west is a non-industrial private forest owner who has cleared a band of timber along the property line presumably for horses or grazing, although there is no sign of recent pasturage. The southern property line demarcates the 1:20 rural forest zone from the 1:5 rural residential zone. Four five-acre tax parcels adjoin the southern property line, although it appears these parcels are being managed as two distinct home sites. Large tracts of industrially owned timberland are currently up for sale, and it is likely that these

areas will be subdivided for residential development down to them minimum zoning requirement.

Past management history

The original old growth forests in this area were clear cut shortly after the turn of the century. At the time, replanting was not required and forests naturally regenerated to a mix of Douglas-fir, western red cedar, hemlock and mixed hardwoods such as red alder, big leaf maple and cottonwood. Based on stumps still evident on the property, the majority of this site was dominated by Douglas-fir. The second growth was clear cut in approximately 1985 by the Weyerhaeuser Corporation and replanted to a single-species plantation of Douglas-fir.

Current management practices

This property was purchased in August, 2011 by the Hanson Family. In the intervening time the property lines have been identified and flagged with orange ribbon, a timber inventory has been conducted, and a variety of berry and nut producing trees and shrubs have been planted along the margins of the north-south portion of the forest axis road.

RESOURCE DESCRIPTIONS AND MANAGEMENT PRACTICES

RESOURCE CATEGORY I – FOREST HEALTH/WILDFIRE/INVASIVE SPECIES

Forest health

The predominant forest health issue affecting this property is an extensive infection of root rot. During the forest inventory conducted between April-May of 2012, root rot was identified in nearly every area of the property. As is typical of root rot, the infections are spotty and scattered throughout the stand with varying levels of impact ranging from a few trees in some areas to a pocket of up to an acre in another area. Root rot is most pervasive throughout the southern portion of the eastern parcel.

Invasive species

Scotch broom and Himalayan blackberry have also gained a foothold along the margins of the forest access road running through the property. The infestation is limited to the road margins and doesn't appear to have spread into the stand with the exception of some areas in the southern portion of the east parcel where the canopy is much more open.

Wildfire

This property is at moderate risk of wildfire. The developed residential properties along the southern property line present a vector for fire. Additionally, the dense stand conditions with ladder fuels, dense understory brush and ample downed woody material throughout the property increase the short-term potential for fire.

Management recommendations

1. Salvage log root rot pockets to recover merchantable Douglas-fir while it still has value. Following harvest, replant root rot pockets with western red cedar
2. After thinning, prune lower branches of Douglas-fir to 20 feet to reduce ladder fuels
3. Cut and/or hand-pull Scotch broom and Himalayan blackberry.

RESOURCE CATEGORY II – SOILS

Site class: III

Site index: 106 – 188 (50 yrs)

Site productivity: 143 – 157 cu/ft/acre (572 – 628 bf/acre)

King County Area, Washington (WA633)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AgC	Alderwood gravelly sandy loam, 6 to 15 percent slopes	0.8	1.3%
EvC	Everett gravelly sandy loam, 5 to 15 percent slopes	30.8	46.5%
Sk	Seattle muck	1.0	1.5%
Subtotals for Soil Survey Area		32.6	49.2%
Totals for Area of Interest		66.3	100.0%

Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties) (WA634)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Alderwood gravelly loam, 6 to 15 percent slopes	0.2	0.3%
11	Barneston gravelly coarse sandy loam, 6 to 30 percent slopes	33.5	50.5%
Subtotals for Soil Survey Area		33.7	50.8%
Totals for Area of Interest		66.3	100.0%

Barneston gravelly coarse sandy loam, 6 to 30 percent slopes.

This very deep, somewhat excessively drained soil is on terraces. It formed in a mixture of volcanic ash and glacial outwash. The native vegetation is mainly conifers and shrubs. Elevation is 800 to 1,400 feet. The average annual precipitation is about 60 inches, and the average annual air temperature is about 48 degrees F. The average frost-free period is about 160 days. Typically, the surface is covered with a mat of needles, decomposed roots, leaves, and twigs 2 inches thick. The surface layer is dark grayish brown gravelly coarse sandy loam 9 inches thick. The subsoil is dark yellowish brown very gravelly sandy loam 5 inches thick. The upper 7 inches of the substratum is dark brown extremely gravelly sand. The lower part to a depth of 60 inches is dark yellowish brown extremely gravelly sand. The depth to extremely gravelly sand ranges from 14 to 20 inches. In some areas the surface layer is gravelly loam, gravelly sandy loam, very gravelly sandy loam, or very gravelly coarse sandy loam. In other areas the soil has less than 35 percent rock fragments in the subsoil, has a substratum of extremely gravelly sand at a depth of 24 to 36 inches, has a better developed subsoil, or has a substratum of very gravelly sandy loam.

Included in this unit are small areas of Nargar, Norma, Ogarty, and Tokul soils and Barneston soils that have slopes of more than 30 percent or less than 6 percent. Included areas make up about 10 percent of the total acreage. Permeability is moderately rapid in the upper part of the Barneston soil and very rapid in the substratum. Available water capacity is low. The effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. This unit is used mainly as woodland. It also is used as a source of aggregate. Douglas fir is the main woodland species. Among the trees of limited extent are western hemlock and western red cedar. The common forest understory plants are Oregon grape, salal, western sword fern, western bracken fern, red huckleberry, and vine maple. On the basis of a 100-year site curve, the mean site index for Douglas fir is 135. On the basis of a 50-year site curve, it is 105. The highest average growth rate in unmanaged, even-aged stands of Douglas fir is 138 cubic feet per acre per year, occurring at age 70. The kind of equipment that can be used and the time of year when it can be used normally are not restricted on this unit. The use of wheeled and tracked equipment during short periods when the soil is wet, however, causes excessive rutting. Using low-pressure ground equipment can minimize damage to the soil. Logging roads require suitable surfacing for year-round use. Rounded pebbles and cobbles for road construction are readily available. Cut and fill slopes tend to ravel when dry. Equipment and logs on the surface result in a moderate degree of soil displacement when the soil is dry. Carefully laying out roads and skid trails, properly timing their use, and using low-pressure ground equipment can reduce the degree of displacement. A moderate reduction in productivity can be expected to result from unmanaged fires in undisturbed areas. Seedling establishment and mortality are the main concerns affecting timber production. Reforestation can be accomplished by planting Douglas fir seedlings. A low content of moisture in the surface layer during the growing season hinders the survival of planted and naturally established seedlings. If seed trees are available, natural reforestation of cutover areas by Douglas fir and western hemlock occurs periodically. When openings are made in the canopy, the uncontrolled invasion and growth of competing plants can delay the establishment of seedlings. Competing vegetation can be controlled by mechanical or chemical means.

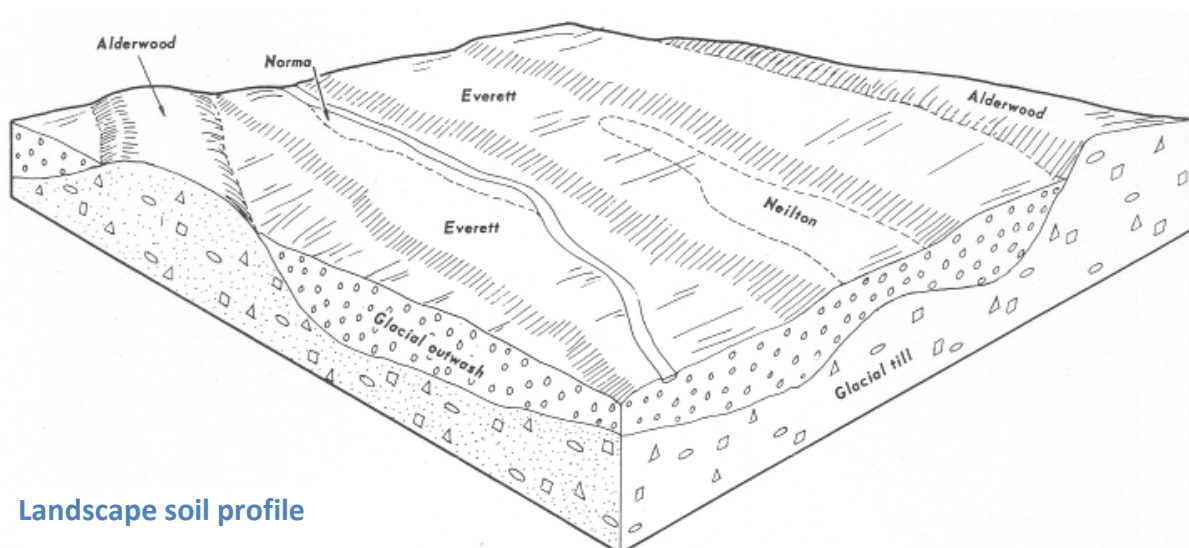
Everett gravelly sandy loam, 5 to 15 percent slopes

The Everett series is made up of somewhat excessively drained soils that are underlain by very gravelly sand at a depth of 18 to 36 inches. These soils formed in very gravelly glacial outwash deposits, under conifers. They are on terraces and terrace fronts and are gently undulating and moderately steep. Slopes are 0 to 30 percent. The annual precipitation is 35 to 60 inches, and the mean annual air temperature is about 50° F. The frost-free season ranges from 150 to 200 days. Elevation ranges from about sea level to 500 feet. In a representative profile, the surface layer and subsoil are black to brown, gravelly to very gravelly sandy loam about 32 inches thick. The substratum extends to a depth of 60 inches or more. It is multicolored black to gray very gravelly sand. Everett soils are used for



Soil horizons

timber and pasture and for urban development. This soil is rolling. Areas are irregular in shape, have a convex surface, and range from 25 acres to more than 200 acres in size. Runoff is slow to medium, and the erosion hazard is slight to moderate. Soils included with this soil in mapping make up no more than 25 percent of the total acreage. Some areas are up to 5 percent Alderwood soils, which overlie consolidated glacial till; some are up to 20 percent Neilton very gravelly loamy sand; and some are about 15 percent included areas of Everett soils where



Landscape soil profile

slopes are more gentle than five percent and where they are steeper than 15 percent. This Everett soil is used for timber and pasture and for urban development.

Management recommendations

1. Avoid logging and heavy equipment use during wet seasons to minimize rutting and compaction of soils.
2. Lop and scatter logging slash to aid in soil development.
3. Minimize road construction and disturbance of soils for trails.
4. Maintain perpetual forest cover to minimize brush competition and to aid in natural conifer seedling regeneration in the shade of the understory.

RESOURCE CATEGORY III – WATER QUALITY/ RIPARIAN AND FISH HABITAT/ WETLANDS.

See Water Type Map in [Appendix IV](#).

The broad swale in which this property exists has been classified by King County as a Critical Aquifer Recharge Area in the County's Sensitive Areas Ordinance. Therefore, activities that could negatively affect the ground water and aquifer in this area are closely regulated. There are no classified wetlands on the property, although wetland soils do exist on either side of the stream in the northwest corner.

A Type F (fish-bearing) stream runs from north to southwest through the northwest corner of the property.

During the May 2012 inventory of the property, the stream width averaged approximately 20 feet with a depth of two feet. Riparian forest cover was comprised of a mix of Douglas-fir, western red cedar, alder and black cottonwood. Numerous small diameter logs were down across the stream channel, and a wide range of native brush species were prominent both along the stream banks and on small islands throughout the stream channel.



Chemical use policy

The broad swale in which this property exists has been classified by King County as a Critical Aquifer Recharge Area in the County's Sensitive Areas Ordinance. Therefore, activities that could negatively affect the ground water and aquifer in this area are closely regulated. Extra care will be taken to avoid contamination of the ground water and aquifer in this area. No herbicides or other chemicals will be used during management activities. Bio-based bar and motor oil will be used during routine maintenance activities. Contractors will be required to carry spill kits and inspections of logging practices will ensure that equipment is not leaking.

Management recommendations

1. The RMZ and WMZ surrounding the stream and associated wetland soils will be maintained in a fully vegetated condition in order to provide shade and root stability to soils. Additional conifers will be planted in both zones to provide long-term stable shade.
2. Large woody debris input into the stream will be allowed and manually facilitated.
3. Logging and heavy equipment will be excluded from wet soils.
4. Herbicides will be prohibited across the entire property.

RESOURCE CATEGORY IV: FOREST INVENTORY/TIMBER/WOOD PRODUCTS

Given that this property was a former Weyerhaeuser plantation, the primary timber species is Douglas-fir. Although growth rates and stocking density vary slightly across the property, the timber quality and grade is fairly uniform. Due to its location in the bottom of a broad, shallow swale, there is abundant soil moisture to drive timber growth. Therefore, at 26 years of age, the Douglas-fir has already reached merchantable size and is ready for its first commercial thinning. Timber of this age and quality will fall into four primary grades of logs (in order of value): export, veneer, chip-and-saw and pulp. Based on a cursory cruise of the timber, ratios of merchantable logs are likely 20% export/veneer, 60% chip-and-saw, and 20% pulp. Current log prices make a light thinning of this timber economically viable and will provide net revenue back to the landowner.

There are small and dispersed populations of red alder and western red cedar throughout the property. A limited amount of the red alder is currently of commercial age and size, but a further inventory will be necessary to determine whether enough volume exists to justify commercial thinning.

In order to improve both the economic and ecological resiliency of the forest, the long-term timber management objective is to increase both species and age classes of trees. Developing a more biologically diverse and structurally complex forest can lead to more diverse timber products such as: pole logs, oversize logs for post-and-beam markets, higher value species such as alder and cedar; in addition to a wider range of log grades, such as export, veneer, saw, chip-and-saw and pulp. Increased diversity and stand structure can also lead to greater pest and disease resistance, tolerance of and recovery from natural disturbances, and overall forest health and vigor. Over the next 40 years, the composition of the dominant tree species will be managed from the current 95% Douglas-fir to 50% Douglas-fir, 30% western red cedar, 15% red alder and 5% big leaf maple. Variable density thinning and individual and group tree selection will be used to modify the stand structure to support the growth of the latter species. Small patch cuts ranging from $\frac{1}{4}$ - 1 acre may be used to introduce other tree species or to create a broader range of seral conditions across the property.

Annual allowable harvest

When the average age of the forest reaches 50 years old, these soils will be capable of producing approximately 600 board feet of timber per acre per year, or approximately 40 mbf/year across the entire property. However, the current age of the forest is 26 years and current timber volumes average approximately 4.5 mbf/acre. An initial harvest in 2012 is expected to yield approximately 1.5 mbf/acre, or a total of 93 mbf across the entire property. A second commercial harvest will be scheduled for 2022, at which time the average harvest will likely be closer to 3 mbf/acre, or a total of 186 mbf. A third commercial thinning will be

scheduled for 2032. Therefore, over the 20 year period between 2012 and 2032, approximately 248 mbf of timber will be harvested from the site. This translates to a sustained yield of approximately 14 mbf/year for the next 20 years.

Harvest systems

The rocky nature of the soils in this area lend themselves well to nearly all types of ground-based logging with both tracked and rubber tired skidders. Additionally, these soils can tolerate heavy equipment during both summer and winter months. The ideal logging system for the first entry thinning is either with a processor or feller-buncher. Processors can be more expensive, but their agility in the woods, low-impact to soils, and high productivity may outweigh their additional costs.

FMU 1

Total acres	Age	Dominant spp.	Trees per acre	Average DBH	Avg. height	Avg. crown ration
1.25	60	Western hemlock	100	20"	120'	50%

FMU 1 is comprised of a residual stand of older trees that were not cut during the last timber harvest approximately 26 years ago, presumably because they are on the other side of the stream and therefore were inaccessible. This small stand sits upon an abrupt knob that emerges from the surrounding wetland environment. The stand is comprised primarily of western hemlock and western red cedar, but also includes big leaf maple, Douglas-fir and a few red alder. The canopy of the stand is relatively dense and is effectively suppressing most understory vegetation with the exception of sword fern. Several old-growth stumps still remain in this area, most with hemlock regenerating from them.



This stand serves as a useful “reference stand” as it indicates the growth potential of the soils in the area.

Management recommendations

1. This stand will be conserved as a reference stand with no management applied to it.

FMU 2

Total acres	Age	Dominant spp.	Trees per acre	Average DBH	Avg. height	Avg. crown ration
7.5	26	Red alder	600	6"	45'	40%

Stand 2 comprises a wetland and riparian management zone around a perennial stream that runs from NE to SW across the NW corner of the property. The stand is covered in a dense growth of vine maple and willow with cottonwood and alder scattered throughout the area. No commercial hardwood or conifer species occur throughout this stand. Understory vegetation ranges from sword fern to moss-covered soil. There are no snags and downed logs are limited to very rotten old-growth logs that still remain from the original logging approx. 100 years ago.



Recommendations:

1. Manage stand primarily for water quality and stream protection, specifically shade and sediment filtration. This will involve creating long-term enduring shade trees such as conifers, as well as increasing species complexity in groundcover, understory and mid-canopy layers.
2. Manage stand for wildlife habitat and, over time, for late seral conditions. This will involve manually and naturally recruiting snags and downed logs, growing and conserving older trees, managing for a multi-canopy forest,
3. In 2013, prepare site for planting conifers and more diverse hardwood species by manually cutting planting holes into brush.
4. In 2013, girdle select cottonwoods to create short-term snags
5. In 2014, in the winter plant area with approx. 150 western red cedar, western hemlock and Oregon ash per acre (50:25:25 mix).
6. In 2014, install a variety of sizes of bird boxes throughout stand to replicate nesting cavities
7. In 2014, in the late spring cut back competing vegetation from around newly planted seedlings.
8. In 2015, in the late spring cut back competing vegetation from around newly planted seedlings.
9. Long-term, continue to monitor seedling growth and cut back competing vegetation as necessary to ensure optimum growth of desired species.

FMU 3

Total acres	Age	Dominant spp.	Trees per acre	Average DBH	Avg. height	Avg. crown ration
39	26	Douglas-fir	260	9"	61'	<40%

FMU 3 is a former industrial timber plantation and is comprised of an even-aged stand 95 percent Douglas-fir that was planted on a management density of approximately 400 trees per acre.

Mortality, browse and other factors have reduced the stand to a highly variable density of between 140 – 400 trees per acre, with an average of 260. A small

component of red alder, bitter cherry and cascara are scattered as individuals or small groups throughout the stand. This unit was clear cut in 1984 and replanted in 1985 making the current stand 27 years old. Tree growth varies across the property, with diameters ranging from 7 – 10 inches DBH. The stand has been in the stem exclusion phase for approximately 10 years and live crowns have receded, on average, to below 40 percent.



The composition and diversity of understory vegetation varies depending on canopy density and ranges from dense thickets of vine maple in gaps to nearly bare ground where the canopy is more closed. Other understory species include: sword fern, red huckleberry, Indian plum, salal and trailing blackberry.

Root rot is common throughout the unit, with a large three acre patch occurring near the southeast corner and multiple smaller pockets emerging sporadically in many other areas. The root rot is creating numerous small diameter snags and downed logs, as well as creating canopy gaps in which a greater diversity of shrubs and low trees are regenerating. Large, old downed logs are common throughout this unit.



Management recommendations

1. In 2013 commercially thin to a variable density of approximately 175 trees per acre. Thin predominantly from below, removing the smallest diameter trees with the least live crowns first. Salvage log merchantable timber in and around root rot pockets while retaining snags as is practical. Retain existing hardwoods.
2. In 2013 following commercial thinning, prune remaining trees to 20 feet in order to reduce fuel ladders, introduce more sunlight to forest floor and improve timber quality.
3. In 2013 following commercial thinning install three bird boxes per acre of varying sizes in order to attract a variety of bird species.
4. In 2013 prepare sites for underplanting western red cedar throughout stand and in root rot pockets
5. In 2014 plant western red cedar throughout stand at 100 trees per acre. Plant a combination of western red cedar and red alder and in root rot pockets at 200 trees per acre (50:50). Cage trees to prevent deer brows. Plant big leaf maple throughout entire site at five trees per acre.
6. In 2014 cut back competing vegetation from around cedar seedlings.
7. In 2015 cut back competing vegetation from around cedar seedlings.
8. In 2023 commercially thin stand to approximately 100 trees per acre. Thin from below, removing the smallest diameter trees with the least live crown. Salvage log merchantable quality trees in and around root rot pockets.
9. In 2023 prepare sites for planting additional western red cedar.
10. In 2024 plant an additional 50 western red cedar per acre. Cage trees to prevent deer brows. Plant big leaf maple throughout entire site at five trees per acre.
11. In 2025 cut back competing vegetation from around cedar seedlings.
12. In 2026 cut back competing vegetation from around cedar seedlings.
13. In 2030 commercially thin dominant Douglas-fir to a variable density of 50 - 75 trees per acre. Use variable density thinning and thin both from above and from below to promote the growth of understory cedar.

FMU 4

Total acres	Age	Dominant spp.	Trees per acre	Average DBH	Avg. height	Avg. crown ration
21	26	Douglas-fir	300	7.75"	60'	<40%

FMU 4 is a former industrial timber plantation and is comprised of an even-aged stand of 95 percent Douglas-fir that was planted on a management density of approximately 400 trees per acre. Mortality, browse and other factors have reduced the stand to a highly variable density of between 150 – 400 trees per acre, with an average of 300. A small component of red alder, bitter cherry and cascara are scattered as individuals or small groups throughout the stand. This unit was clear cut in 1984 and replanted in 1985 making the current stand 26 years old.

Tree growth varies across the property, with diameters ranging from 7 – 10 inches DBH. The stand has been in the stem exclusion phase for approximately 10 years and live crowns have receded, on average, to below 40 percent. This stand sits on slightly higher ground, with elevations reaching up to 30 – 65 feet above the western half of the



parcel. This increase in elevation, coupled with the well-drained rocky soils, contributes to much drier conditions that have slightly reduced the growth rates of trees in this stand. Although tree heights are comparable to the remainder of the forest, average diameter growth is slightly less.

The composition and diversity of understory vegetation varies depending on canopy density and ranges from dense thickets of vine maple in gaps to nearly bare ground where the canopy is more closed. Other understory species include: sword fern, red huckleberry, Indian plum, salal and trailing blackberry.

Root rot is also common throughout the unit, with the majority of observed occurrences occupying the southeast corner of the stand. The root rot is creating a new cohort of small diameter snags and downed logs. Very old, large and rotten downed logs occur frequently throughout the unit.

Management recommendations

1. In 2013 commercially thin to a variable density of approximately 200 trees per acre. Thin predominantly from below, removing the smallest diameter trees with the least live crowns first. Salvage log merchantable timber in and around root rot pockets while retaining snags as is practical. Retain existing hardwoods.
2. In 2013 following commercial thinning, prune remaining trees to 20 feet in order to reduce fuel ladders, introduce more sunlight to forest floor and improve timber quality.
3. In 2013 following commercial thinning install three bird boxes per acre of varying sizes in order to attract a variety of bird species.
4. In 2013 prepare sites for underplanting western red cedar throughout stand and in root rot pockets
5. In 2014 plant western red cedar throughout stand at 100 trees per acre. Plant a combination of western red cedar and red alder and in root rot pockets at 200 trees per

acre (50:50). Cage trees to prevent deer brows. Plant big leaf maple throughout entire site at five trees per acre.

6. In 2014 cut back competing vegetation from around cedar seedlings.
7. In 2015 cut back competing vegetation from around cedar seedlings.
8. In 2023 commercially thin stand to approximately 100 trees per acre. Thin from below, removing the smallest diameter trees with the least live crown. Salvage log merchantable quality trees in and around root rot pockets.
9. In 2023 prepare sites for planting additional western red cedar.
10. In 2024 plant an additional 50 western red cedar per acre. Cage trees to prevent deer brows. Plant big leaf maple throughout entire site at five trees per acre.
11. In 2025 cut back competing vegetation from around cedar seedlings.
12. In 2026 cut back competing vegetation from around cedar seedlings.
13. In 2030 commercially thin dominant Douglas-fir to a variable density of 50 - 75 trees per acre. Use variable density thinning and thin both from above and from below to promote the growth of understory cedar.

RESOURCE CATEGORY V: PROPERTY ACCESS/ ROADS AND TRAILS

Primary access to the parcel is from 290th Ave SE to the west. The parcel is geographically isolated from the public and can only be accessed by a gravel forest road easement that runs through two adjoining private parcels. The easement begins at 290th Ave SE to the west and first runs north through a family-owned woodlot. The easement



then passes into an industrially owned and managed timber plantation before dropping south and entering the parcel from the north at the midpoint. The gravel road continues due south through the parcel, then turns east at the midpoint and continues on a southeasterly direction before exiting the parcel at the southeast corner. The gravel road narrows significantly from where it enters the parcel and is currently not suitable for use by larger vehicles unless widened.

Neither entrance to the parcel is gated and locals appear to frequently use the road as a pass-through. During site visits in early 2012, four-wheel drive trucks were observed driving through the parcel, but they continued on without stopping. There is also sign of ATV use both on the road and on a limited network of off-road trails through the forest.

An abandoned skid trail also runs from east to west through the center of the western parcel. The trail is currently blocked by a tank trap where it intersects the main gravel access road through the property.

Management recommendations

1. In 2013, remove Scotch broom from road margins.
2. In 2013, reopen skid trail through western half of property.
3. In 2013, build landing in preparation for logging.
4. In 2014, reseed landing with native forage mix.

General management recommendations:

- Avoid heavy equipment use during wet seasons
- Monitor forest roads for invasive species and remove as necessary

RESOURCE CATEGORY VI: WILDLIFE

Overview

King County has a number of unique features that provide desirable habitat for many species of fish and wildlife. These features include Puget Sound, a multitude of lakes and streams, coastal beaches, upland plains and hills, and high mountains to the east. The mild climate, the many sparsely populated areas, and the diversity of habitat are favorable to a variety of fish, shellfish, and wildlife.

The principal resident freshwater fish are rain bow, cutthroat, brook, and lake trout; dolly varden char; whitefish; kokanee; largemouth, smallmouth, and rock bass; bluegill; crappie; pumpkinseed; brown bullhead; and yellow perch. Several kinds of salmon, steelhead, and searun cutthroat are the principal anadromous fish.

The soil types across each parcel have a potential for providing food, cover, or water for some species of wildlife. Rarely does one soil provide all things needed for a single species. Some soils support grass, others woody shrubs, others trees, and others are commonly adjacent to water. Where these soils occur in proper relationship, they complement each other in supplying food and shelter for wildlife.

Deer are most abundant in the eastern part of the survey area in the Alderwood, the Buckley-Alderwood, the Everett, and the Beausite-Aldenwood associations. Small animals, such as rabbit, fox, mountain beaver, and squirrel, inhabit most of the associations. Fur-bearing animals live near the streams in all associations. The principal big game animals, black-tailed deer and black bear, provide excellent hunting. Blue and ruffed grouse, ring-necked pheasant, California quail, band-tailed pigeon, and mourning dove are the significant upland game birds. Cottontail rabbit is the only significant upland small game animal. The Area supports beaver, muskrat, mink, river otter, weasel, skunk, bobcat, red fox, coyote, raccoon, and other valuable fur bearers. Harvest opportunities are excellent, and many fur animals are trapped each season.

The major waterfowl are mallard, pintail, canvasback, ruddy, bluebill, and wood duck; redhead; bufflehead; widgeon; goldeneye; green-winged teal; shoveler; Canada, lesser Canada, snow cackling, and white-fronted geese; and black brant.

Managing for wildlife

All forests will be managed to optimize wildlife habitat and species. Common management practices will include:

1. Managing for diverse tree species and ages,

2. Managing for horizontal heterogeneity (e.g. gaps, regenerating young stands, older stands, etc.),
3. Naturally and artificially recruiting snags and downed coarse woody debris,
4. Promoting understory diversity by minimizing canopy density,
5. Protecting streams, wetlands and other sensitive hydric sites,
6. Promoting the growth of berry and nut producing trees and shrubs

Snags and downed logs are two critical habitat components that are commonly missing in 2nd and 3rd generation forests. Natural recruitment requires forest conditions that allow for a certain percent of trees to grow old and senesce, succumb to diseases or pests, or be subject to natural disturbance events such as wind and ice storms. Snags and downed logs can also be managed for and artificially recruited. Girdling, cutting off tops, cutting and dropping, and leaving non-merchantable pieces following logging are all strategies for adding dead wood to a forest system. Through a combination of natural recruitment and artificial production, the landowner will strive for the following targets for snags and downed logs:

1. Downed logs: more than five logs per acre that are a minimum of 12" in diameter and 20' long
2. Snags: more than 4 snags per acre 20" in diameter and 60' tall

RESOURCE CATEGORY VIII: AESTHETICS AND RECREATION

There are no short-term plans to manage the forest for recreation. The homogenous industrial quality of the plantation does not lend itself to great aesthetics, so camping and other forms of recreation are unlikely until the forest matures and develops into a more natural composition. Given the proximity to adjoining residential parcels, hunting will not be allowed.

RESOURCE CATEGORY IX: SPECIALIZED FOREST PRODUCTS (OPTIONAL CATEGORY)

A survey will be made of potential floral greens (e.g. salal, sword fern, Oregon grape, etc.) in order to determine if the property has sufficient quantity and quality to justify further consideration as a cash crop. Cultivation and management of other agroforestry or special forest products are not currently planned for the property.

APPENDIX I. NRCS RESOURCE CONCERNS

NRCS Biological Technical Note 14 (attached as appendix to plan) was used as an inventory and analysis tool to identify the following resource concerns on this property.

Site Specific Concern	Resource Concern	Description of Concern	Quality Criteria
Stream has <25% canopy cover. Canopy is 100% hardwood.	Water Quality - Harmful Temperatures of Surface Water	Undesired thermal conditions degrade surface water quality.	Use and management of land and water are coordinated to minimize impacts on surface water temperatures. Water Sampling: State Standards. Shade/Canopy Cover: 60--80% where the site supports trees.
Root rot is ubiquitous throughout the forest	Plant Condition - Productivity, Health and Vigor	Plants do not produce the yields, quality, and soil cover to meet client objectives.	Selected plants on or planned for the site are sufficiently productive to meet or exceed client needs. For specific land uses, additional criteria apply: Crop: A healthy stand with vigorous growth produces at least 75% of site potential Forest/Agroforest: Forests consist of healthy stands with vigorous growth having a stand density within 25% of optimum stocking on a stems/acre basis.
Homogenous stand structure dominated by a single age and species of tree.	Plant Condition - Productivity, Health and Vigor	Plants do not produce the yields, quality, and soil cover to meet client objectives.	Selected plants on or planned for the site are sufficiently productive to meet or exceed client needs. For specific land uses, additional criteria apply: Crop: A healthy stand with vigorous growth produces at least 75% of site potential Forest/Agroforest: Forests consist of healthy stands with vigorous growth having a stand density within 25%

			of optimum stocking on a stems/acre basis.
Scotch broom and Himalayan blackberry are well established along road margins	Plant Condition - Noxious and Invasive Plants	The site has noxious or invasive plants present.	The site is managed to control noxious and invasive plants and to minimize their spread.
Dense conifer stand has dead branches from canopy to forest floor.	Plant Condition - Wildfire Hazard	The kinds and amounts of fuel loadings (plant biomass) pose risks to human safety, structures, and resources, should wildfire occur.	Fuel loadings are reduced and/or isolated to meet client needs in minimizing the risk and incidence of wildfire.
Site lacks snags of a functional size as well as new recruitment of large downed logs.	Fish and Wildlife - Inadequate Cover/Shelter	Cover/shelter for the species or guild of species of concern is unavailable or inadequate. This includes lack of hiding, thermal, and/or refuge cover.	The ecosystem or habitat types support the necessary plant species in adequate diversity, abundance, and physical structure; and the connectivity of fish and wildlife cover is adequate to support, over time, the species or guild of species of concern. NRCS-WA Biology Technical Note 14: Forest-60%; Aquatic-75%.

APPENDIX II. MANAGEMENT PLAN IMPLEMENTATION TIMETABLE

For the next 20 years (longer at owner's discretion) indicate planned management practices and anticipated year to be implemented.

If applying for NRCS-administered Farm Bill financial assistance programs (e.g. EQIP) to implement practices, be sure to indicate NRCS Practice Code here and indicate location of practice on attached map or photo.

Year	Management Practice or Activity	Location (Stand)	Extent (#, acres, etc.)	NRCS Practice Code (if applicable)	Comments
2013	Remove Scotch broom and Himalayan blackberry from road margins				Pile and burn
2013	Reopen skid trail through western half of property and develop landing				
2013	Girdle select cottonwoods to create short-term snags	2	7.5	643	Cottonwoods only occur in FMU 2
2013	Commercially thin	3, 4	61.5		Thin to 175 – 200 tpa. Thin predominantly from below, removing the smallest diameter trees with the least live crowns first. Salvage log merchantable timber in and around root rot pockets while retaining snags as is practical. Retain existing hardwoods.
2013	Following commercial thinning, prune remaining trees	3, 4	61.5	660	Prune to 20 feet in order to reduce fuel ladders, introduce more sunlight to forest floor and improve timber quality.

2013	Following commercial thinning install three bird boxes per acre of varying sizes in order to attract a variety of bird species.	2, 3, 4	69	643	
2013	Following commercial thinning, site prep for planting more diverse conifers and hardwoods	2, 3, 4	61.5	490	Cut back competing vegetation and scarify soil in a 2' radius around each planting site.
2014	Reseed landing with native forage mix	3	0.5		
2014	Plant a combination of conifers and hardwoods	2, 3, 4	61.5	612	FMU 2: plant 150 western red cedar, western hemlock and Oregon ash per acre (50:25:25 mix) FMU 3 & 4: plant western red cedar throughout stand at 100 trees per acre. Plant a combination of western red cedar and red alder and in root rot pockets at 200 trees per acre (50:50). Cage trees to prevent deer browse. Plant big leaf maple throughout entire site at five trees per acre.
2014	Cut back competing vegetation from around tree seedlings	2, 3, 4	61.5	612	In the late spring cut back competing vegetation from around newly planted seedlings.
2015	Cut back competing vegetation from around tree seedlings	2, 3, 4	61.5	612	In the late spring cut back competing vegetation from around newly planted seedlings.
2023	Commercially thin	3, 4	61.5		Thin to approximately 100 trees per acre. Thin from below, removing the smallest diameter trees with the least live crown. Salvage log merchantable quality

					trees in and around root rot pockets.
2023	Prepare sites for planting additional western red cedar.	3, 4	61.5	490	Cut back competing vegetation and scarify soil in a 2' radius around each planting site.
2023	Plant western red cedar	3, 4	61.5	612	Plant an additional 50 western red cedar per acre. Cage trees to prevent deer brows. Plant big leaf maple throughout entire site at five trees per acre.
2023	Cut back competing vegetation from around tree seedlings	3, 4	61.5	612	In the late spring cut back competing vegetation from around newly planted seedlings.
2024	Cut back competing vegetation from around tree seedlings	3, 4	61.5	612	In the late spring cut back competing vegetation from around newly planted seedlings.
2030	Commercially thin	3, 4	61.5		Thin dominant Douglas-fir to a variable density of 50 - 75 trees per acre. Use variable density thinning and thin both from above and from below to promote the growth of understory cedar

APPENDIX III. FOREST MONITORING PLAN

A basic monitoring program will document the following forest management attributes:

1. Yield of all forest products harvested.
2. Growth rates, regeneration and condition of the forest.
3. Composition and observed changes in the flora and fauna.
4. Environmental impacts of harvesting and other operations.
5. Costs, productivity, and efficiency of forest management.

Additional qualitative forest monitoring will be conducted during regular walks through the forest. Field notes will be collected and periodically added as an appendix to this management plan. The following attributes will be monitored, at a minimum, via observations:

1. Continued effects and spread of root rot
2. Presence of invasive species, in particular along forest access and haul roads and along margins of forest.
3. Snag and downed log recruitment

Monitoring record

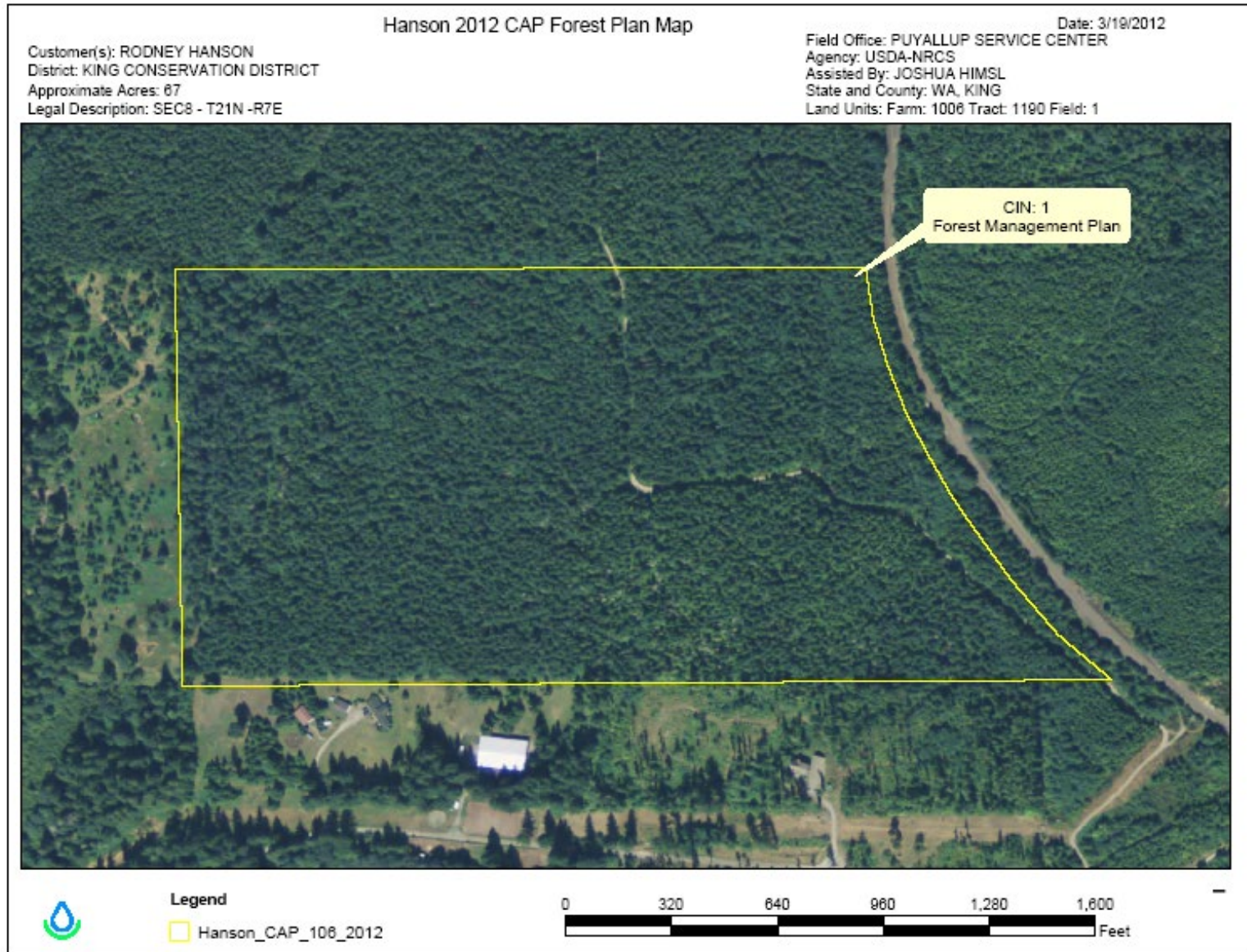
Date	Observation	Note taker

APPENDIX V. AERIAL PHOTO(S)/PROPERTY MAP(S)

Aerial photo



NRCS CAP Forest Plan Map



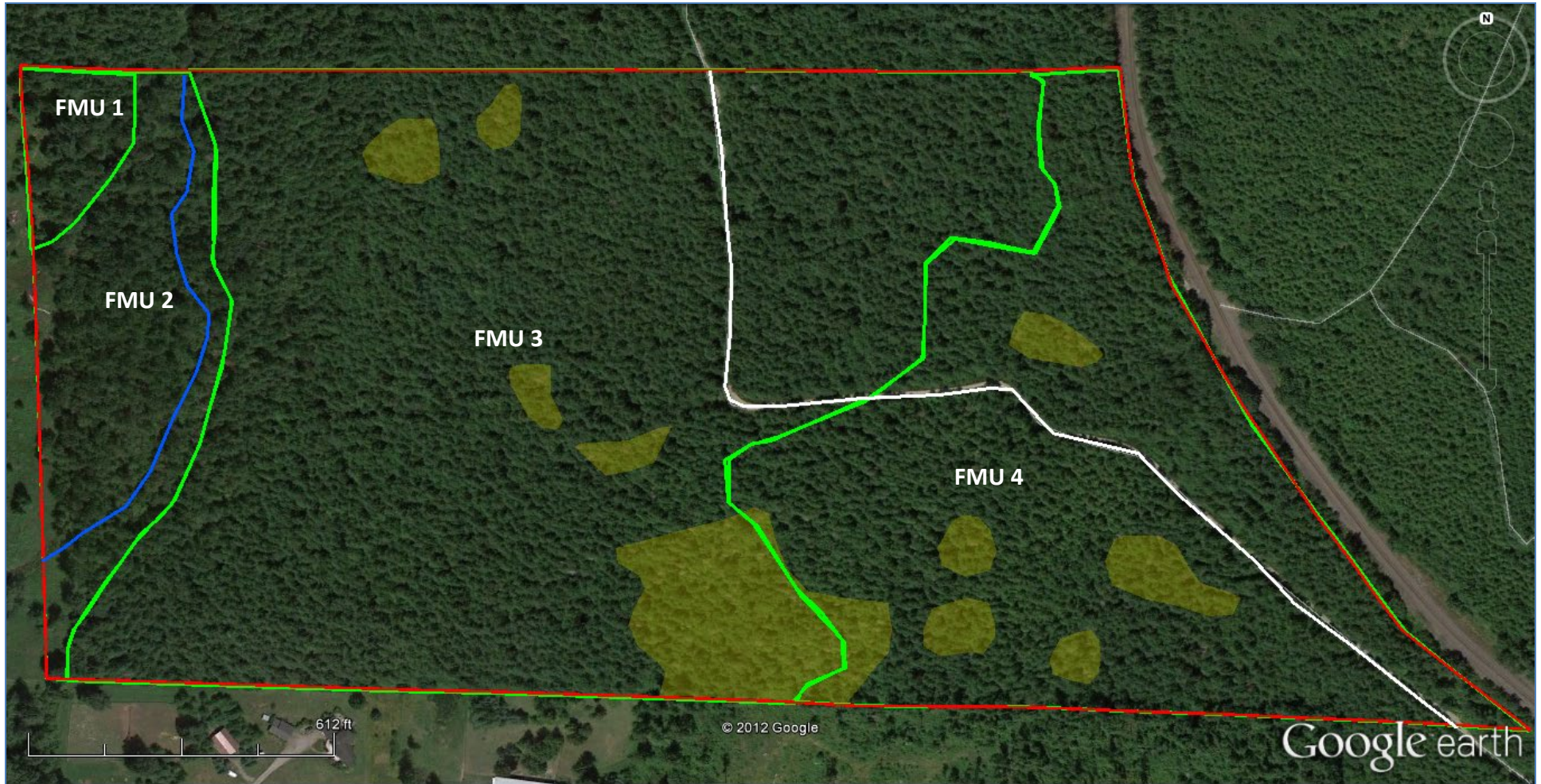
Conservation Activity Plan Map

Hanson Family Forest

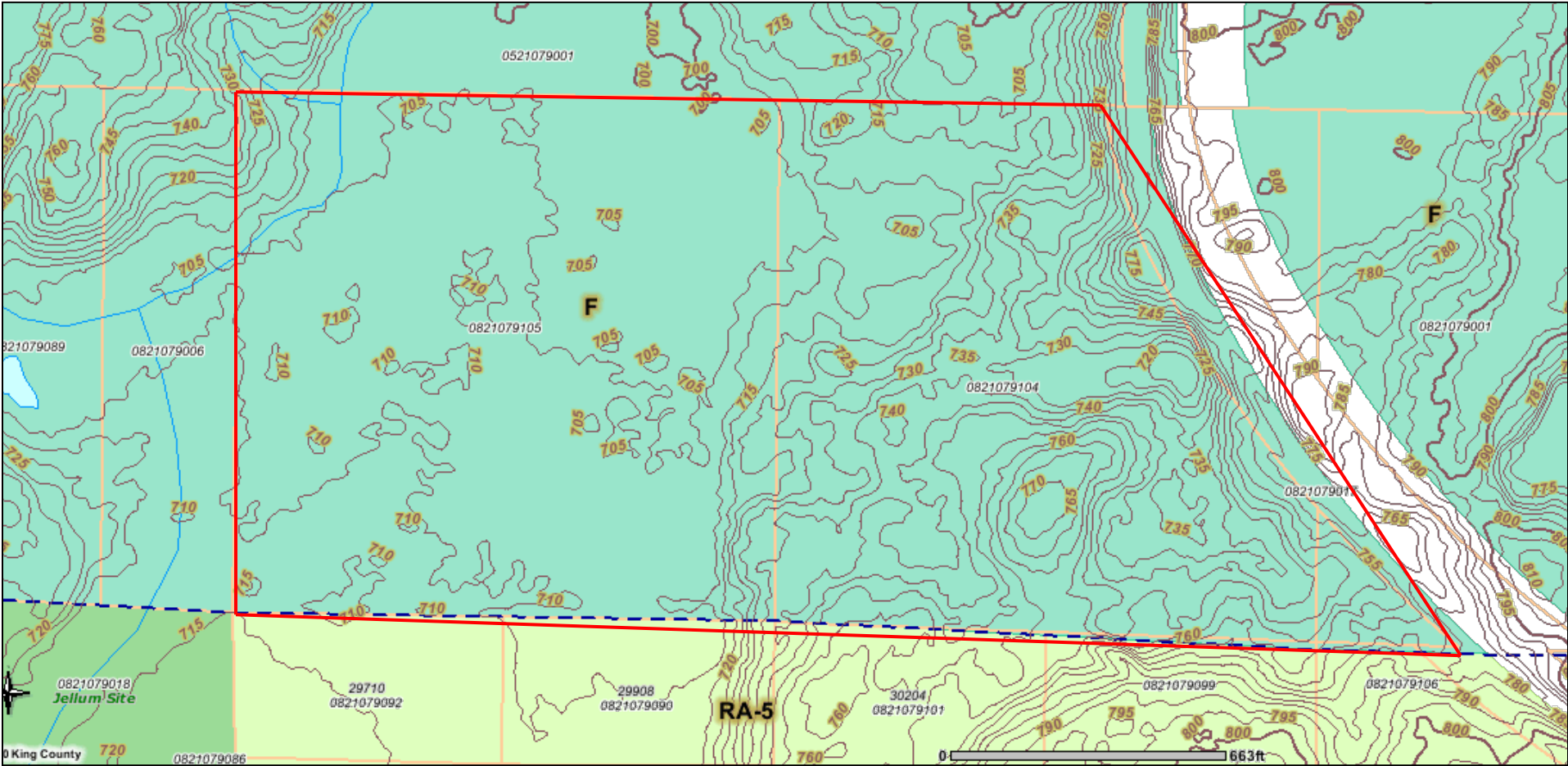
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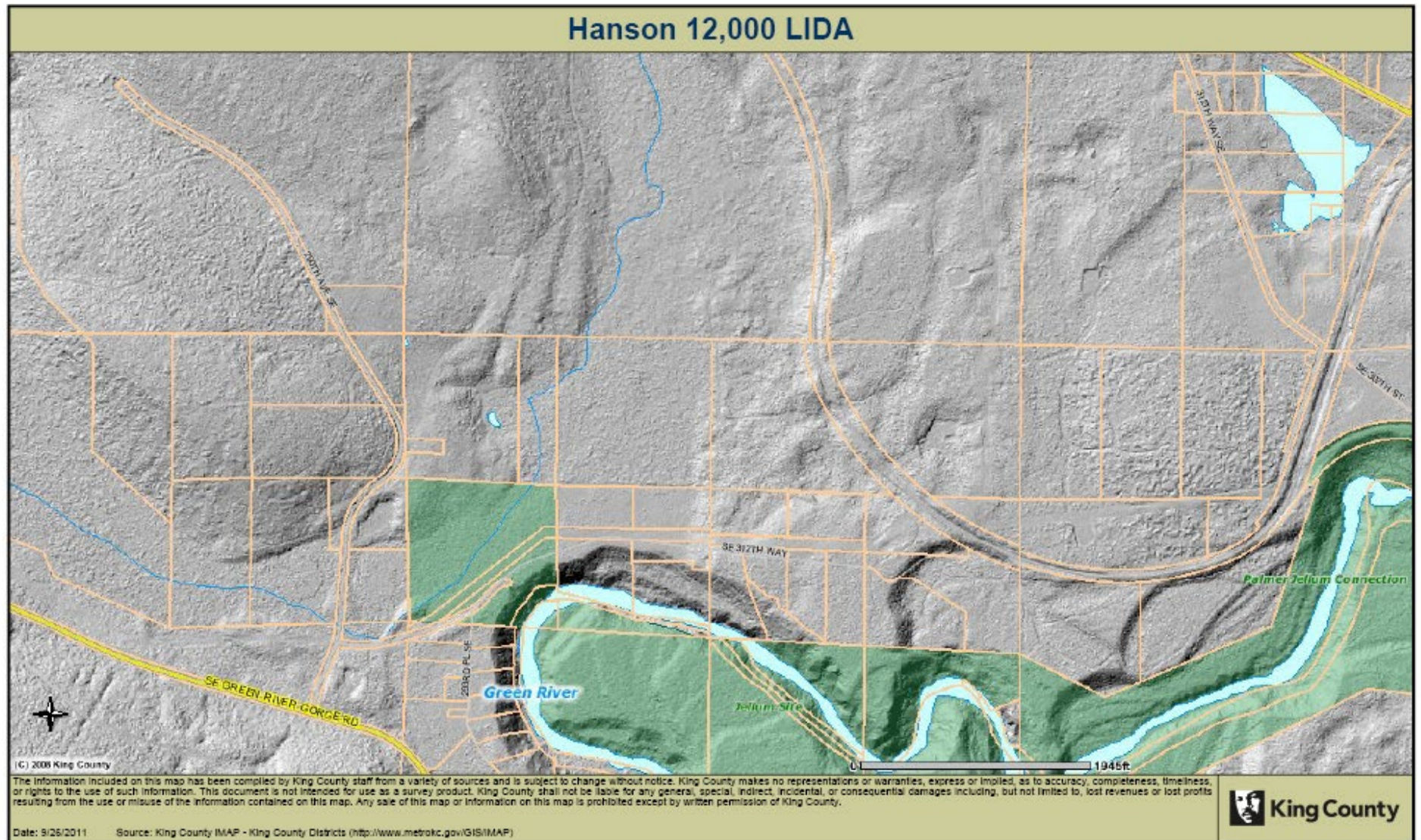
Total project acres: 69.4 acres

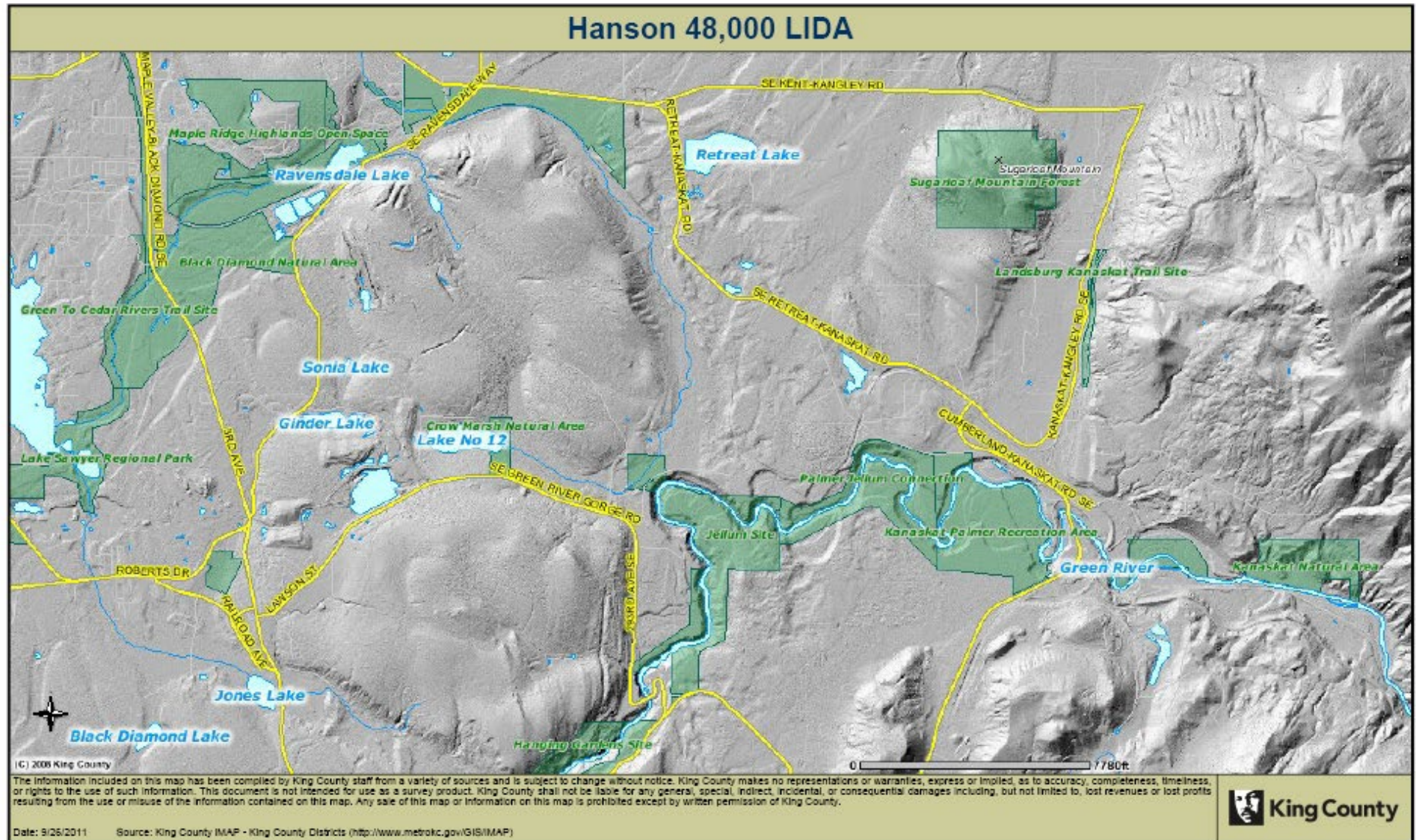
Date Created: 10/27/12 By: Kirk Hanson, NW Certified Forestry

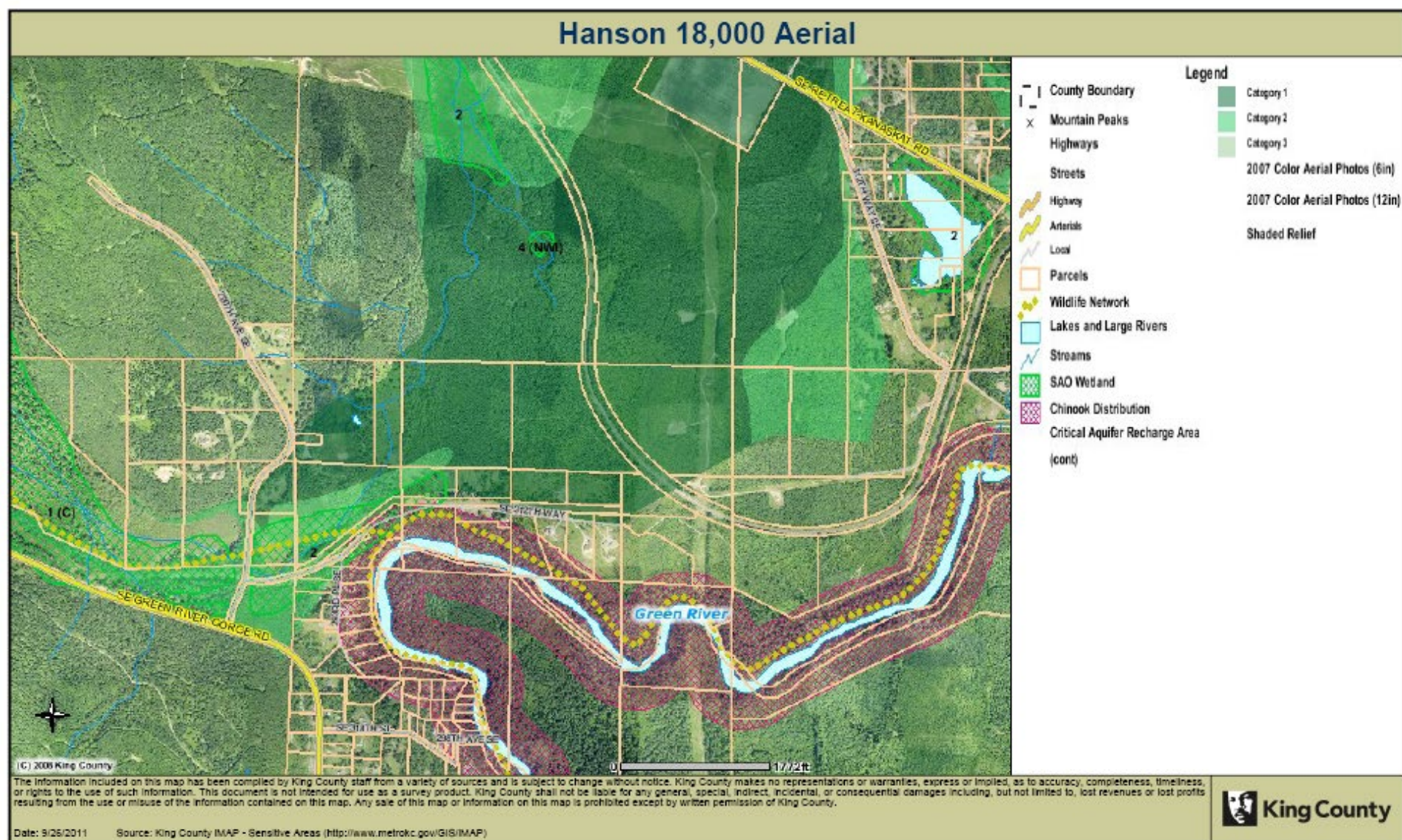


Topographic Map

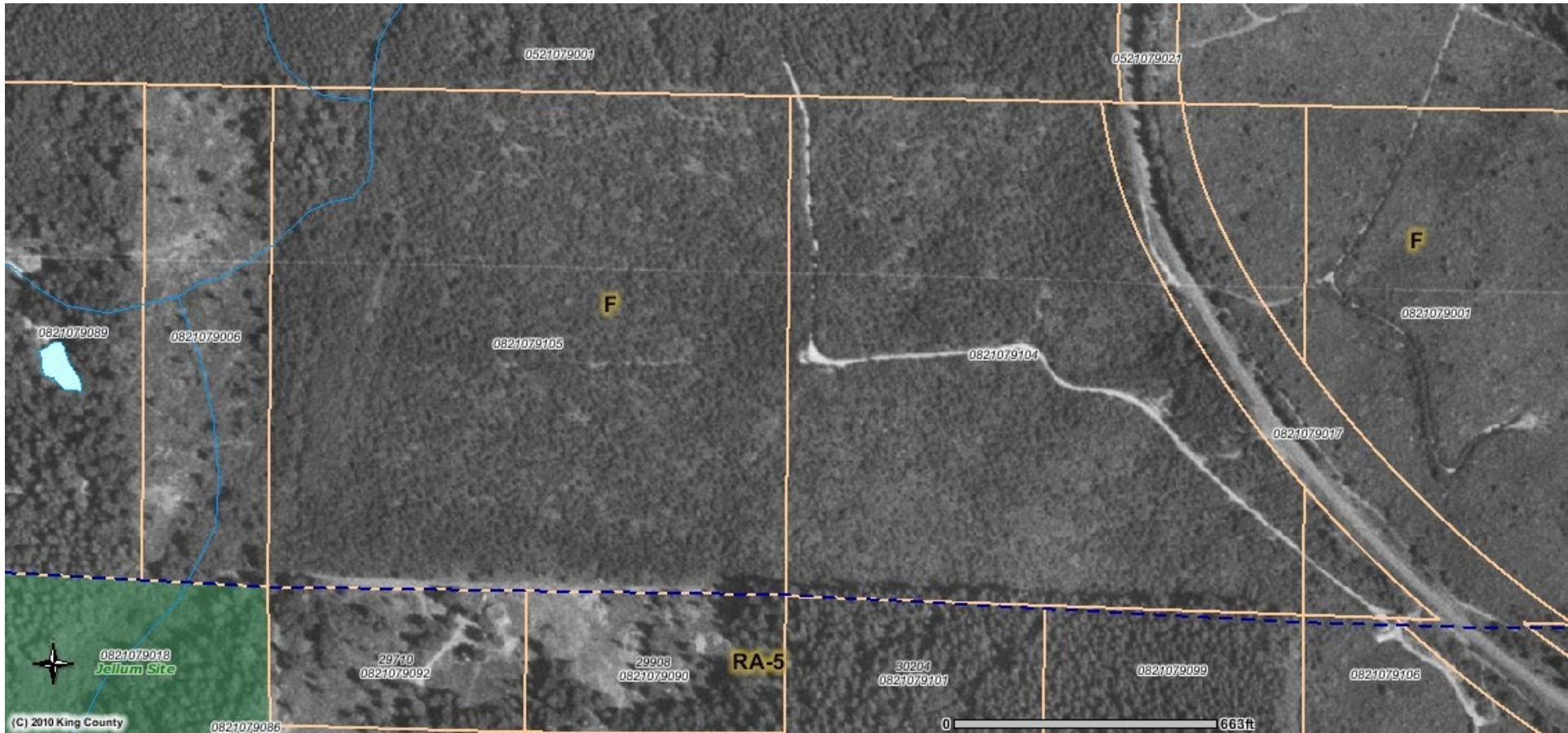




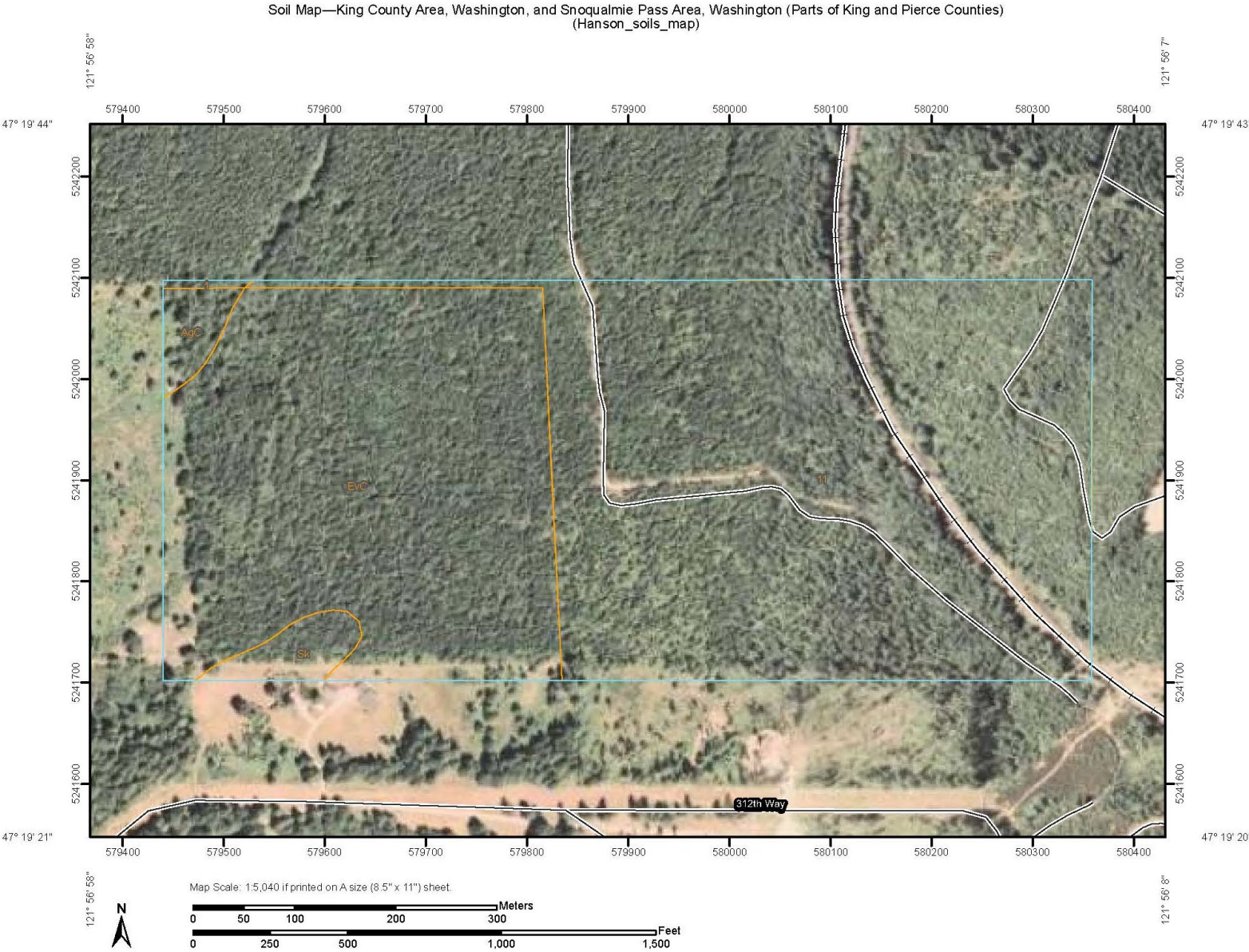




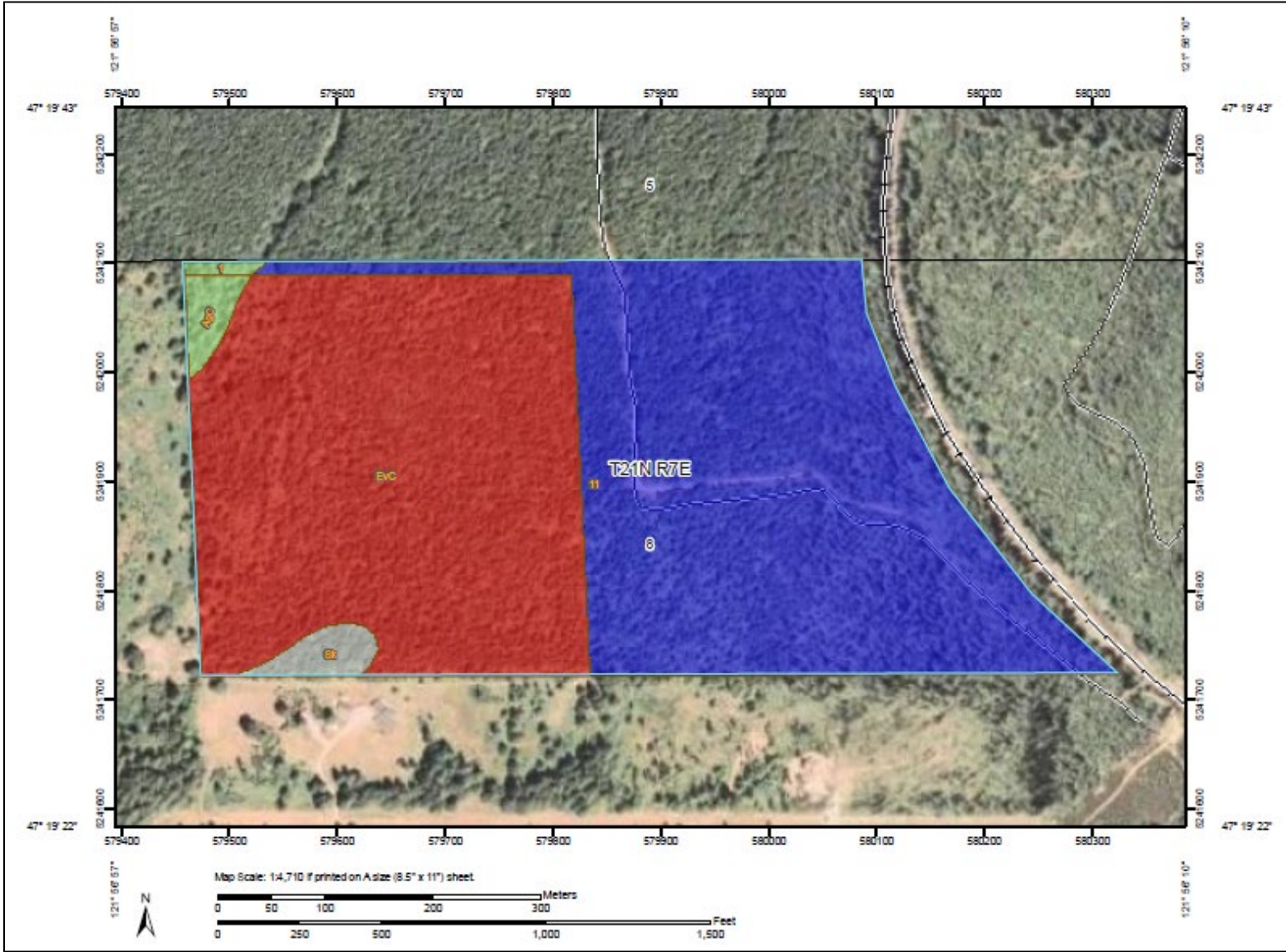




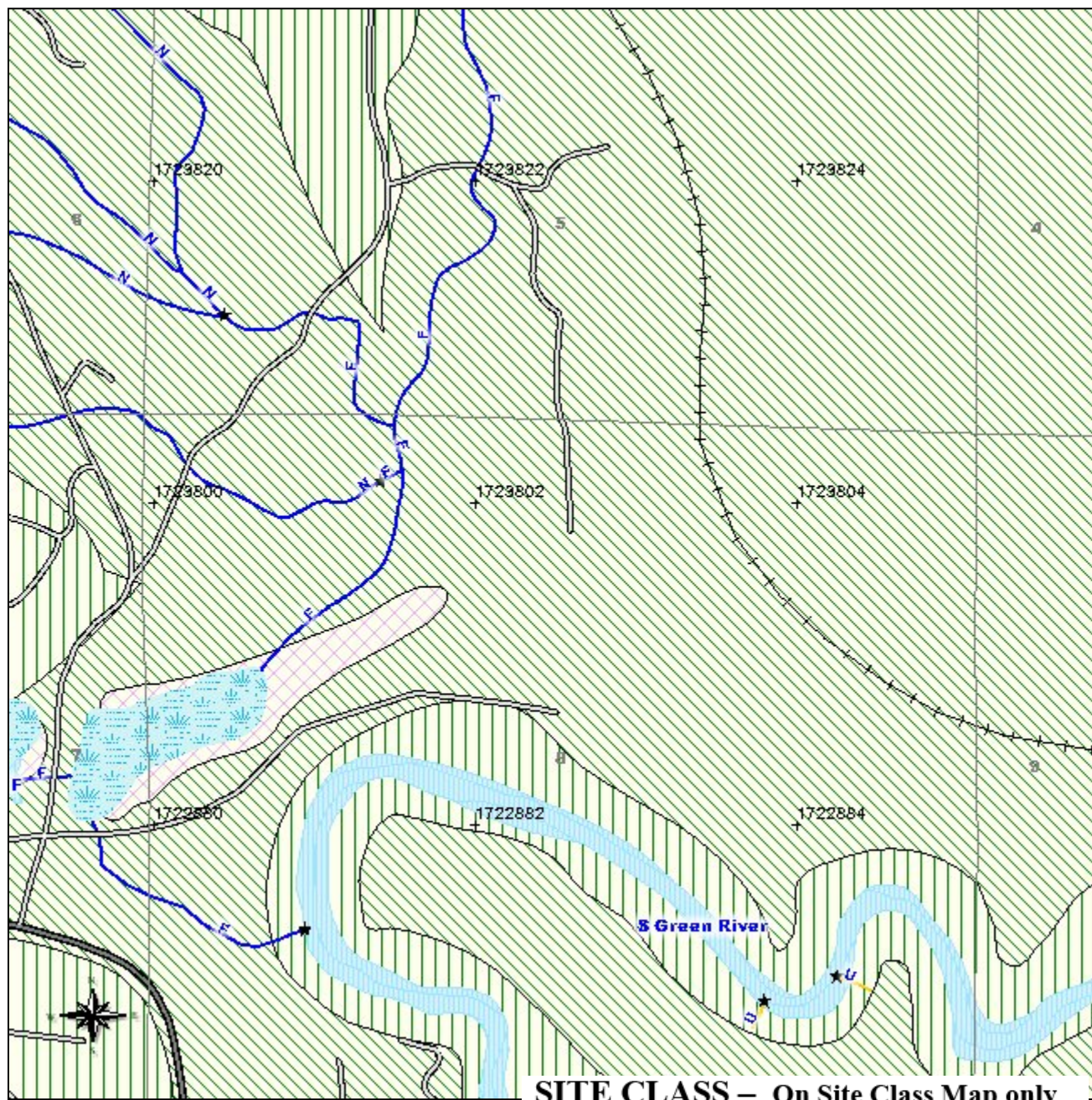
Soils Map



Soil Site Index Map



Soil Site Class Map



SITE CLASS – On Site Class Map only

	Site Class I
	Site Class II
	Site Class III
	Site Class IV
	Site Class V

PLAN APPROVAL SIGNATURES

DNR FOREST STEWARDSHIP PLAN APPROVAL (IF APPLICABLE)

This plan meets the requirements for a Forest Stewardship Plan.

WA State Department of Natural Resources Authorized Representative Date

Print Name:

Affiliation:

Address:

Phone :

E-mail:

USDA-NRCS CONSERVATION ACTIVITY PLAN APPROVAL (IF APPLICABLE)

This plan meets the requirements for a USDA-NRCS Conservation Activity Plan.

Signature of USDA-NRCS Authorized Representative Date

Print Name:

Title:

Affiliation:

Address:

Phone:

E-mail:

CERTIFICATION MANAGEMENT PLAN APPROVAL (IF APPLICABLE)

This plan meets the requirements for XXX CERTIFICATION PROGRAM.

Signature of XXX CERTIFICATION Program Authorized Representative

Date

Print Name:

Title:

Affiliation:

Address:

Phone:

E-mail:

CURRENT USE TIMBER MANAGEMENT PLAN APPROVAL (IF APPLICABLE)

This plan meets the requirements for a Timber Management Plan for current use property tax programs.

Signature of Authorized County Government Representative

Date

Print Name:

Title:

Affiliation:

Address:

Phone:

E-mail:

APPENDIX I

RESOURCE DESCRIPTIONS AND MANAGEMENT PRACTICES

Purpose

This appendix is intended to provide additional guidance and suggestions for things plan preparers may wish to include in their Resource Description and Management Practice narratives. The relevance of each these items to a particular plan will vary. Some, possibly many, of the items mentioned may not be applicable depending on the particular property, resource conditions, and the owner's objectives. Similarly, there may be items relevant to a specific property which may not be listed here.

RESOURCE CATEGORY I: FOREST HEALTH/WILDFIRE/INVASIVE SPECIES

Resource Conditions

Insects, diseases, drought, wildfire hazard/excessive fuels, damage from weather and natural disasters (fire, snow/ice, wind, flooding, debris slides, etc.), damage from wild or domestic animals, site-inappropriate species, stressed/overstocked stands, invasive species/noxious weeds, human-caused damage, etc.

Management Practices

Thinning, pruning, slash disposal, firebreaks and defensible space around structures, improved access for firefighters, prescribed burning, changes in tree species composition, prevention/control treatments for animal damage, insects, and diseases, sanitation and salvage practices, biological, mechanical, and chemical control of noxious weeds/invasive species.

RESOURCE CATEGORY II: SOILS

Resource Conditions

Soil names, parent material, textures, drainage, productivity, erosion, unstable slopes, mass wasting, compaction potential, hard pan layers, high water table, poor drainage, seasonal flooding, droughty soils, access and operability problems. (Soils issues related to roads and trails should primarily be discussed in that section).

Management Practices

Erosion and mass wasting prevention and control, seeding and planting, access and equipment operability restrictions, limitations on road and trail location and construction, species selection for planting on “problem soils”, specific site preparation techniques, changes to drainage, fertilization, moisture conservation measures. (Management practices related to roads and trails should be primarily discussed in that section).

RESOURCE CATEGORY III : WATER QUALITY/RIPARIAN AND FISH HABITAT/ WETLANDS

Resource Conditions

Water quality impaired waterways (303d listed), unstable or failing stream banks, fish passage barriers or impairments, lack of adequate riparian vegetation, less than desirable conifer component in riparian areas, lack of woody debris or spawning gravels, livestock impacts to riparian areas and waterways, known or potential sources of sediment delivery to waterways, opportunities to create off-channel fish habitat, problematic riparian or aquatic species.

Management Practices

Riparian and wetland planting, livestock exclusion fencing, control of invasive riparian or aquatic species, removal of fish passage barriers, in-channel and off-channel fish habitat improvement, creation or expansion of wetlands, control of sediment delivery.

RESOURCE CATEGORY IV: FOREST INVENTORY/TIMBER/WOOD PRODUCTS

Resource Conditions

Site quality, unstocked or understocked stands, overstocked stands, site inappropriate species, tree form and quality, tree damage, insect infested/diseased trees, competing vegetation.

Management Practices

Afforestation, reforestation, conversion of brush patches or understocked stands to trees, competing vegetation control, animal damage control, release from brush competition, pre-commercial thinning, commercial thinning, pruning, fertilization, root disease control, species conversion.

RESOURCE CATEGORY V: PROPERTY ACCESS/ROADS/TRAILS

Resource Conditions

Road and trail surface type and condition, erosion or drainage issues, ditch and culvert conditions, need for maintenance, repair, upgrades, abandonment, or new construction. Trespass, access, or easement issues.

Management Practices

Access/use restrictions, grading, new or additional rock surfacing, ditch and culvert maintenance, install/improve drainage or erosion control devices, install/replace culverts, upgrade undersized culverts, install/repair/replace/remove stream crossing structures, right of way vegetation control, erosion control seeding, removal of hazard trees near roads and trails, installation of gates, fencing, signage or access control devices, boundary marking, routine inspection of roads/trails, prompt inspection of roads/trails following storm events, new road or trail construction, road or trail abandonment.

RESOURCE CATEGORY VI: WILDLIFE

Resource Conditions

Food, water, shelter/cover, nesting/rearing habitat, travel corridors, snags, downed woody debris, designated wildlife leave trees or habitat recruitment trees, nesting and roosting structures, food plots/forage seeding areas, tree and shrub plantings. Animal damage problems.

Management Practices

Snag/woody debris retention and creation, installation of nesting structures, forage seeding, retention and planting of food producing tree and shrub species, spring development, water guzzler installation, variable density thinning, wetland creation or enhancement, designation and retention of wildlife leave trees. Animal damage control measures.

RESOURCE CATEGORY VII: PROTECTION OF SPECIAL RESOURCES

Refer to the DNR publication *Forest Practices Illustrated* (pages 22-27, 100-101) for examples of threatened, endangered, cultural, and historic resources and further discussion regarding their protection and sources of additional information. Additional helpful information can also be found on websites for the Washington Department of Fish and Wildlife (Priority Habitats and Species); Washington Natural Heritage Program (rare/endangered plants); and Washington Department of Archaeology and Historic Preservation.

RESOURCE CATEGORY VIII: AESTHETICS AND RECREATION

Resource Conditions

Panoramic vistas, viewpoints, waterfalls, unique geologic features, cabins, camping and picnicking areas, aesthetic buffers to undesirable views. Access, suitability, and infrastructure for current and proposed recreational activities by the owners or others (e.g. picnicking, hiking, camping, fishing, hunting, bird watching/nature study, horseback riding, mountain biking, x-c skiing, swimming, boating, snowmobiling, ATV's, group recreation or education events, etc.).

Management Practices

Activities to create, improve, or maintain recreational access and infrastructure. Create, maintain, or improve viewpoints. Retain or create aesthetic buffers. Activities to enhance user safety during recreational use. Activities to control, restrict, or direct recreational use.

RESOURCE CATEGORY IX: SPECIALIZED FOREST PRODUCTS (OPTIONAL)

Resource Conditions

Presence and condition of floral greens, boughs, Christmas trees, mushrooms, berries and other edibles, medicinal plants, etc. Current condition and functional status of any agroforestry practices such as windbreaks, silvopasture, alley cropping, and forest farming. Current or potential income opportunities from biomass, carbon sequestration, ecosystem services, ecotourism, land leasing, etc.

Management Practices

Thinning, pruning, fertilization, shearing, weed control, planting, seeding, insect and disease control, etc.

END