COLUMBIA RIVER GORGE COMMISSION
EST. 1986

For office use:
Application No. _____

Land Use Application

Applicant(s) Dave Spitzer and Laurie Garber

Mailing Address:2325 NE 19th ave, Portland, OR 97212

Phone:503 307 4644

Email dave@dmsarchitects.com

Property Owner(s) Dave Spitzer and Laurie Garber

Mailing Address: same

Phone: same

Email: same

Summary of Proposal: New road, retaining wall and pump house

Parcel Address

Township, Range, Section, Qtr. Section

Tax Lot Number(s) 0311280000 2800

Parcel Size (acres) 9.42 acres

Existing Use of Parcel Open Space

Use of Adjacent Parcels Open Space and Residential

Project Description: Please describe all proposed development and use of the development, including size, height, exterior colors, construction materials of proposed structures (including access roads), areas of ground disturbance, and landscaping details. Please describe all aspects of your project in this description or the public notice and final decision may not include an element of your development, which could require a new notice and decision. You may attach additional pages if necessary.

To develop this parcel for an agricultural use. The use/request is for agriculture land, roads, an agricultural building, water well/pump house and a solar array. They are all outlined in the attached report.

The property owner and holders of easements and partial interests indicate that they are aware that an application is being made on the subject property and the property owner authorizes the Gorge Commission and the Commission's designees reasonable access to the site to evaluate the application.

Applicant(s) signature:	Date
Dave Spitzer	7.13.22

Property owner(s) signature:	Date

Easement and Partial Interest(s) signature:	Date

Adjacent Property Owners

Township, Range, Section, Tax Lot Number	Name and Address (and e-mail if possible)
03112800000900	Kreps ranch llc 421 bz0glenwood rd. White salmon wa 98672
03112800002900 031128003100	Fred Heaney PO Box 1400 White Salmon, WA 98672
03112800003000	USA 902 Wasco Ave #200 Hood River OR 97031
03112800002100	Pacific Rim Builders PO Box 1400 White Salmon WA 98672
03112800002600	Alvin Heaney PO Box 1400 White Salmon WA 98672

DMS ARCHITECTS, INC. - ARCHITECTURE & PLANNING
2325 NE 19th AVE. PORTLAND, OREGON 97212 PHONE: (503) 307-4644

Date: 11-4-2025

To: Krystyna Wolniakowski and Bryce Guske

Please accept this re-submittal of our proposal pursuant to our Settlement Agreement dated 7-2-2025.

1. GOAL

Establish a profitable vineyard using available open space on our land while protecting and enhancing the oak woodland and Western Gray Squirrel habitat.

2. SITE DESCRIPTION (Attachment 1-Site Plan)

Our parcel is a 9.42-acre rectangle South of Courtney Road on Burdoin Mountain just east of White Salmon, Washington. It is within the Columbia River Gorge National Scenic Area, with a land use designation of Special Management Area (SMA) - Agriculture. It is bordered by the Kreps Ranch to the West, Courtney Road to the North, private land with a home to the West, and a combination of Forest Service and private land to the South on the bluff above the Columbia River. The private land South of us contains a communications tower and utility building.

This fascinating and beautiful piece of land contains 3 distinct zones:

- At the North end, adjacent to Courtney Road at about 1590 ft elevation, there is a dense and mature conifer forest of fir and pine that has mostly crowded out the oaks. We've identified 5 Western Grey Squirrel nests in the conifer forest.

- In the middle of the parcel, moving South from Courtney Road and sloping gently downhill towards the Gorge, the conifer forest slowly transitions to healthy and mature Oregon white oak woodland.

- Finally, at the Southern edge of the property, the oaks give way to open grassland around 1510 ft elevation. At the SW corner, the oaks extend further and the small area of open grassland falls away steeply towards the high bluff over the Gorge. At the SE corner, the open area is larger and the slope more gradual.

We plan to use only the open grassland for our vineyard to preserve and enhance the oak woodland and Western Gray Squirrel habitat. No work is proposed within the conifers or oaks except the access road to the vineyard area. The agriculture areas are as far from the Western Grey Squirrel nests as allowed by the site.

3. PROPOSED AGRICULTURAL USE (Attachment 2 -Alan Busacca Report)

We propose to plant a vineyard for production of wine grapes to sell for a profit. We consulted with an experienced viticulture and soils expert, Dr. Alan Busacca, to assess the suitability of the site. His attached Report concludes:

> "[T]he slopes and aspect and air drainage of the proposed vineyard blocks are great for wine grapes from a vineyard siting perspective and would not require any tree removal as the areas are weedy former cattle grazing areas. Soils are near ideal for wine grapes in texture, potential rooting depth, and composition. Degree days are in range to offer the potential to grow a wide range of mid to mid-late ripening red and [white] wine grape varieties. Rainfall will supply perhaps 2/3 to 100% of the stored soil moisture needed to grow wine grapes of high quality for wine and a domestic well can supplement water needs from mid season to harvest if a storage system is developed."

We plan to hire out much of initial work: laying out the vineyard, installing the trellis and irrigation system. Once planted, we'll perform much of the labor and maintenance on the vineyard ourselves.

We've joined the Columbia Gorge Winegrowers Association (CGWA) to better understand the economic and practical aspects of growing and selling grapes in this region. We'll also continue working with Dr. Busacca, who also co-owns Windhorse vineyard outside The Dalles, for expert advice.

4. PLANTING AREA (Attachment 1-Site Plan)

We propose to plant a total of 1.7 acres to maximize use of space available for agriculture without having to remove any oak trees or encroach on squirrel habitat. Vineyards will be planted in 2 blocks: 1.5 acres on the SE corner, and .2 acre in the SW corner. Dr. Busacca evaluated the soils in both areas and noted: "The contrasting character of the soils in area 1 in the southeastern part of the property versus that in area 2 in the southwestern part of the property creates opportunities to plant different grape varieties and possibly on different rootstocks or using different training methods to create different character in the resulting wines."

The SE block will be planted in North-South rows to maximize sunlight on both sides of the vine leaf canopy. The SW corner block will be planted in rows on more of an NE–SW orientation to accommodate the steeper slope. The trellis and irrigation materials used in the vineyard shall be dark in color and made of non-reflective materials to maintain visual subordinance. The metal end posts for the trellises shall be painted matte black to achieve a non-reflective and dark appearance. Our vineyard will retain the overall appearance of an agricultural landscape, blending easily with the adjacent natural oak woodland landscape.

5. Fencing (Attachment 1-Site Plan)

To protect the vines from being eaten and damaged by deer, it's essential that we install approximately 1,100 linear feet of new woven wire deer fencing around the periphery of each vineyard in the locations shown on the attached site plan. Deer exclusion fencing is standard on every vineyard we've seen in the Columbia River Gorge AVA. See Grapes.extension.org/late-

season-bird-and-deer-control-in-vineyards/#Deer: "Deer will browse on tender shoots in the spring, which can set a new vineyard back an entire season. At harvest, they can cause severe yield losses… An exclusion fence should be part of the basic vineyard development budget.")

Our Eastern property line has a pre-existing deer fence from before we purchased the property. We'll extend the deer fence perimeter from roughly the middle of the eastern side to enclose the 1.5 acre vineyard block at the SE corner. This fenced area includes necessary space for tractors and other equipment to turn-around between vineyard rows within the fence-line. The NE corner of this fence is placed to accommodate an existing gate.

For the .2 acre vineyard block in the SW corner, the fencing will be placed closer to the perimeter of the vines as tractor use will be limited on the slope.

We'll leave a roughly 175' wide section in the middle of our Southern property line completely unfenced and open for wildlife passage. From this opening, deer and elk will continue to pass easily through our property. The Kreps maintain a 42" wildlife friendly barbed wire fence on our Western property line. The county installed a similar fence on our Northern property line as part of the Courtney Road improvement project that predated our purchase.

For the new fencing, we'll use 84-inch woven mesh deer fence wire in black or earth tones with one smooth single strand placed one foot above. The corner and support posts will be treated light green pine and the posts between will be painted steel T posts. Galvanized barbed wire or galvanized or black or green colored steel will be used for construction of gates for access where shown, except the gate at the NE corner which is existing and will remain unchanged.

6. PROFITABILITY (Attachment 3-Business Plan and NW Grape Calculator.)

We've developed the attached Business Plan for our vineyard operation. Using the NW Grape Calculator and appropriate inputs for our business, we project our annual income from grape sales to exceed our cash costs by year 2. By year 5, we'll have eliminated the carryover loss from our initial investment. We will fund the basic infrastructure (barn, water, power, road) with owner equity in the business, as those long-term investments will become assets.

7. AGRICULTURAL BUILDING (Attachment 4-Architectural Building Plans, Attachment 5-Viewshed Analysis)

We need a barn for equipment storage and housing for utilities. We sited the barn in the preferred alternative location identified by the CRGC – in a small open space in the central/South part of the property, below the rise at the SW corner, adjacent to the larger vineyard in the SE corner, and away from known Western Gray Squirrel nests. At the proposed size and site, the barn won't break the skyline from any key viewing areas (KVAs) and will be visually subordinate, if not totally invisible, behind an existing mature grove of oak trees.

a. **Size:** At 1,092 square feet, the barn is just big enough to store our tractor, tractor attachments, chemicals, supplies, and storage bins. The barn will be a 42' by 26', single-story, slab on grade structure, unheated except for the bathroom/utility storage area. It will have a garage-style door at the Northern end to allow the

tractor to enter. It will have sliding barn doors on the East and West sides to easily move equipment in and out of the structure. At the Southern end, there will be a utility sink and door to the exterior.

b. **Location:** We commissioned Bell Design Company to perform a viewshed analysis on the proposed barn site (Attachment 5). Bell Design concluded that a 10' tall structure could be placed in the proposed location without breaking the skyline from any KVAs. Because we need a minimum of 14' height in our barn for tractor maneuverability and storage, we propose to dig down 4' in the existing hillside on the Western (higher) side of the barn. The site slopes significantly from West to East at the proposed barn location, so while the Western side will be buried 4' below grade, the Eastern side will have a finish floor aligning with adjacent grade at approximately 1522' elevation

   With this location and adjustment to the Western grade, a 14' tall barn won't break the skyline from any KVA. In fact, only the top few feet of the roof could be visible from the KVAs at all – and that will be hidden behind existing mature oak trees and a communications tower and building. Given that the KVAs are roughly 2 miles away and the barn will be sited behind the neighboring cell tower to the South, a rise of the hill to the SW, and a dense stand of mature oak trees to the SW, S, and SE, we don't expect any part of the barn to be actually visible from the KVAs. Nevertheless, we're following all design standards to be visually subordinate.

c. **Materials:** The materials for the barn have been chosen to minimize the visual impact of the barn as well as for fire resistance. (See Barn imagery on p. 3 of Attachment 4.) The materials will be as follows (manufacturers may vary pending availability):

   i. Siding will be varying width of cedar (3"-8") in a 'burnt' (shou sugi ban) finish from Pioneer Millworks in McMinnville, OR.

   ii. Roofing will be standing seam metal roofing, flat black with a non-reflective glaze from Metallion Industries in Estacada, OR,

   iii. All metal flashing will match the roofing in color and finish.
   Barn doors will be exposed wood in a smoky gray finish by Coast Sequoia.

   iv. The overhead door w/ be aluminum with a black frame from the Overhead Door Co. in Portland, OR.

   v. Doors and windows will be black aluminum with non-reflective glazing from Marvin Windows and Doors.

8. UTILITIES (Attachment 1 – Site Plan)

We are not currently connected to any public utilities and plan to remain off-grid. We can meet our needs for water and power from an onsite well and solar power.

a. **Water:** We checked with the State of Washington Water Resource Program and were told that agriculture uses under 5,000 gallons per day (1,825,000/year) are exempt from requiring irrigation rights. Our usage will be well under this threshold.

b. Irrigation: Vineyards require about 100,000 gallons of water per year per acre at start up, so we'll need irrigation. A 1.70 acre vineyard x 100,000 gallons = 170,000 gallons per year for irrigation. The on-site well produces 6 gallon/min. 6 gallons X 60 minutes X 24 hours X 365 days = 3,153,600 gallons per year, which is well in excess of required irrigation. Drip irrigation uses roughly 5 gallons per acre per minute – so 1.70 acres X 5 = 8.75 gallons per minute (gpm) is required. Because our well only produces 6 gpm and drip irrigation requires 8.75 gpm, we'll need a water cistern. We propose to install a 1,000-gallon underground water cistern. This could allow the irrigation system to run for up to 114 minutes, nearly double the 60 minutes needed for drip irrigation. Non-irrigation water will add a minimal load.

c. **Solar:** There is no available power to this site. We've heard estimates of $30,000 just to bring public utility power to the site. With the abundant sunshine in Klickitat County and our Southern exposure we'd prefer to install solar to energize this small farm. The following items, at a minimum, will require power: well pump (1000 watts), irrigation pump (1000 watts), lights (500 watts), plugs/misc (500 watts).

To power the above, we'd need a solar array that can supply about 3,000 watts. Each solar panel provides between 250 and 400 watts – so to provide 3,000 watts we'd need about 10 3'x5' solar panels. We propose to install solar panels on two separate, ground-mounted arrays that would be a maximum of 7' tall. (See Barn imagery on p. 3 of Attachment 4.) The inverter, batteries, etc would all be in the barn for insulation and protection from the elements. The system will have four 4.8 kwh batteries to store power.

9. ACCESS ROAD (Attachment 1 – Site Plan)

We seek after-the-fact approval of the unpermitted gravel access road shown on the Site Plan. The road is necessary to allow access to the 2 vineyard blocks in the SW and SE corners of the parcel. The entrance point from Courtney Road was decided and established by Klickitat County contracted roadbuilders during the Courtney Road repaving project in 2022, with no notice to or input from us. Shortly after we purchased the property in April, 2022, we were surprised one day to find that the roadbuilders had installed a driveway bib near the NW corner of our property. In early July 2022 (before we learned that we needed a permit for a gravel road), we installed a narrow, one-lane gravel road through the property, starting from that driveway bib. We followed

the grade and wound through the forest to avoid trees, down towards the open area in the SW corner (the landing). We included a naturally open circle halfway down the road to allow for vehicles to pass or turn around. While installing the road, we removed 2 medium sized oak trees about half-way between the circle and the landing. No other trees were removed.

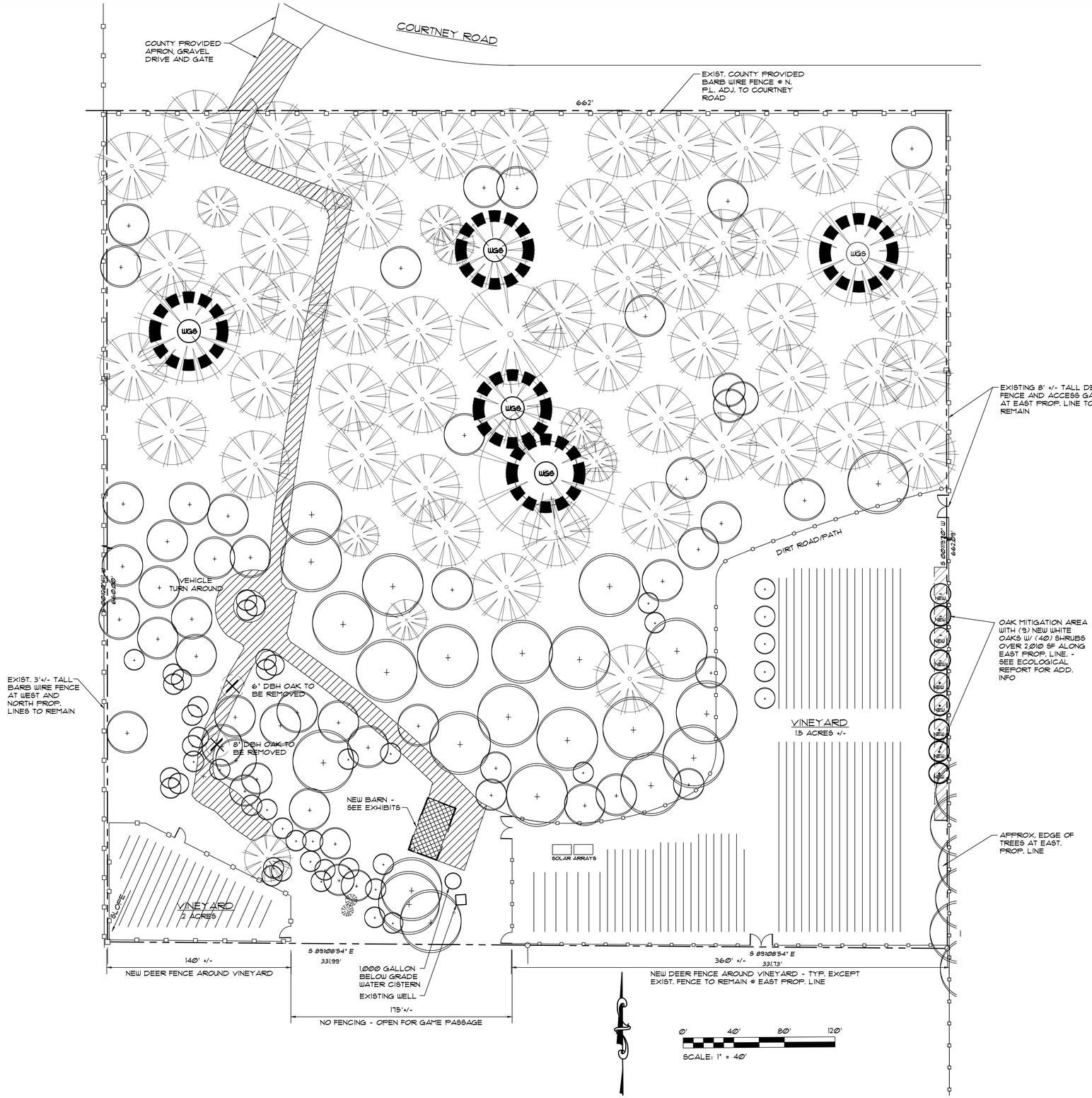
a. **Grading plan** (Attachment 6-Grading Plan): A grading plan is provided with the drawings. The grading plan shows two areas where grading is proposed or after-the fact approval is requested. The first area is the existing landing at the South side of our property. This area is approximately 80' x 20' and approximately 20 yards of dirt have been moved to the downhill or uphill sides of the new 2% sloped area. This landing is necessary as a staging area for equipment to service the second vineyard block in the SW corner of the property. The second area that grading will occur is at the proposed barn site. While the barn is 42'x26', the actual grading area may extend a few feet either side of this for closer to 50'x30' in total. Now that we are burying the barn into the west side of the existing gentle hill, we anticipate removing/displacing approximately 40 yards of soil. About 10-20 yards will likely be taken off site and disposed of, while the remaining 10-20 yards will be distributed around the barn area as allowed or needed. Little to no grading was performed to build the road (it follows existing contours) and no other grading is proposed other smoothing the vineyard planting area of existing small holes, lumps and mounds.

10. MITIGATION FOR REMOVAL OF 2 OAK TREES (Attachment 7-Habitat Assessment and Oak Mitigation Plan from Ecological Land Services)

Biologist Julianne Blake made a site visit and completed a report in September 2025. As mitigation for the 2 oak trees we removed during road construction, she recommends adding 9 new oaks with supporting native shrub understory. This mitigation planting area should be 2,010 sf in total along our East property line as shown on the Mitigation Plan at p. 30.

11. FOREST PRACTICE ALREADY APPROVED (Attachment 8-Forest Practice Consistency Determination)

While separate from this application, please note that we already have an approved Forest Practice plan from September 2024. The purpose of that plan is to enhance Oregon white oak habitat and reduce the risk from wildfire. After our very near miss from the Burdoin fire this July, reducing wildfire risk is top of mind.



LEGEND

- EXIST. CONIFER TREE
- EXIST. OAK TREE
- NEW OAK TREE
- WGS — WESTERN GREY SQUIRREL NEST FROM 2-27-23 SURVEY W/ 50' DIA. 'NO CUT ZONE'
- NEW GRAVEL DRIVE
- NEW OR EXIST. DIRT, GRASS OR BARK PATH AT GRADE
- NEW BARN
- 6" OR 8" (2 TOTAL) DBH OAK TO BE REMOVED

1 SD1 OVERALL SITE PLAN

1" = 40'

REGISTERED ARCHITECT 7708 DAVID SPITZER OREGON JULY 19, 1988 RENEWAL: 12/31/25

DMS ARCHITECTS

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COURTNEY ROAD

WHITE SALMON, WASHINGTON

SHEET CONTENT: OVERALL SITE PLAN

DATE: 10-8-25

REVISIONS

SHEET: SD1 OF 1

VINITAS CONSULTANTS, LLC

ALAN BUSACCA, PH.D.

Certified Professional Soil Scientist No. 24928
Washington State Licensed Geologist No. 1112

PO Box 274, Bingen, WA 98605
cell: 509.592.0756 e-mail: alan@vinitas.net

October 24, 2023

Columbia River Gorge National Scenic Area
Columbia River Gorge Commission
PO Box 730
57 NE Wauna Avenue
White Salmon, WA 98672

Letter Report Evaluating Potential for a Wine Grape Vineyard on Klickitat County Parcel 03112800002800; No Situs Address, Courtney Road, Bingen WA 98605; Owners David Spitzer and Laurie Garber

Introduction: David Spitzer and Laurie Garber own a 9.4 acre +/- parcel of land at about 1550 feet elevation on Courtney Road about 1.5 miles NE of Bingen WA. Like many long time residents of the Pacific Northwest, they have grown excited by the emergence of the Northwest grape and wine industry and they desire to plant a *vinifera* wine grape vineyard on their nearly 10 acre property above the Columbia River and to make wine at a small but commercial scale.

The subject parcel lies within the Columbia River Gorge National Scenic Area (CRGNSA) and so is subject to application for and approval of their plans for a small vineyard and a joint equipment storage and winery building on the property before they can see their dreams realized.

David and Laurie contacted Vinitas Vineyard Consultants in the spring of 2023 to do a site evaluation and to advise them as to suitability of their property for a small vineyard, and, if approved, to assist in the design of the vineyard,, selection of grape varieties, and more.

Vinitas Vineyard Consultants has provided vineyard site evaluation and vineyard development consulting services to landowners in Washington, Oregon, Idaho and Argentina since 2008 and has assisted evaluation of lands for vineyards as small as a fraction of an acre to over 1,000 acres in size (see Appendix I: Vinitas Short Resume). In addition, I, Alan Busacca, owner and principal of Vinitas Consultants, have lived and worked in the Columbia River Gorge area since 2008 and in the Pacific Northwest for more than 35 years. As well, I co-own Windhorse Vineyard, with 35 acres of vineyard on a 160-acre parcel outside of The Dalles, OR (www.windhorsevineyard.com).

VINITAS CONSULTANTS, LLC

The purpose of this short letter report is to document the results of Vinitas' study of the soils, landscape character, slopes, aspect, climate, and other factors that bear on the feasibility to grow *Vitis vinifera* grapes at a high quality level and to make wine from those grapes.

Methods: I made an initial reconnaissance visit to the property in early July of 2023 to see the property and discuss with Dave and Laurie their goals and vision.

I consulted SoilWeb, the online soil survey (https://casoilresource.lawr.ucdavis.edu/gmap/) to determine the soil type(s) mapped on the property by USDA-NRCS, I visited the website for the Columbia River Gorge Commission (https://gorgecommission.org/), I consulted climate and weather databases for the Gorge area and used the WSU AgWeatherNet app (https://weather.wsu.edu/) to estimate growing degree days for wine grapes for the approximate location of the property.

Then I spent a day on the property on July 14, 2023 directing the excavation of backhoe pits, and examining, describing, photographing, and sampling the soils in 2 soil pits in 2 potential vineyard areas. My field soil descriptions are in Appendix 2 below.

I collected 4 soil samples, one each from the 0" to 12" and 12" to 24" depths of the 2 soils I described. Mr. Spitzer then sent them to Western Laboratories, Inc. in Parma, Idaho for complete soil analysis. The analytical results in Appendix 3 and are discussed below in the Findings and Recommendations section.

Please note that I have purposely NOT loaded up this simple analysis report with citations to academic or professional papers to support information stated as fact. If requested, I can provide documentation to specific claims I have made about grape growing or characteristics of the Columbia Gorge.

Findings and Recommendations:

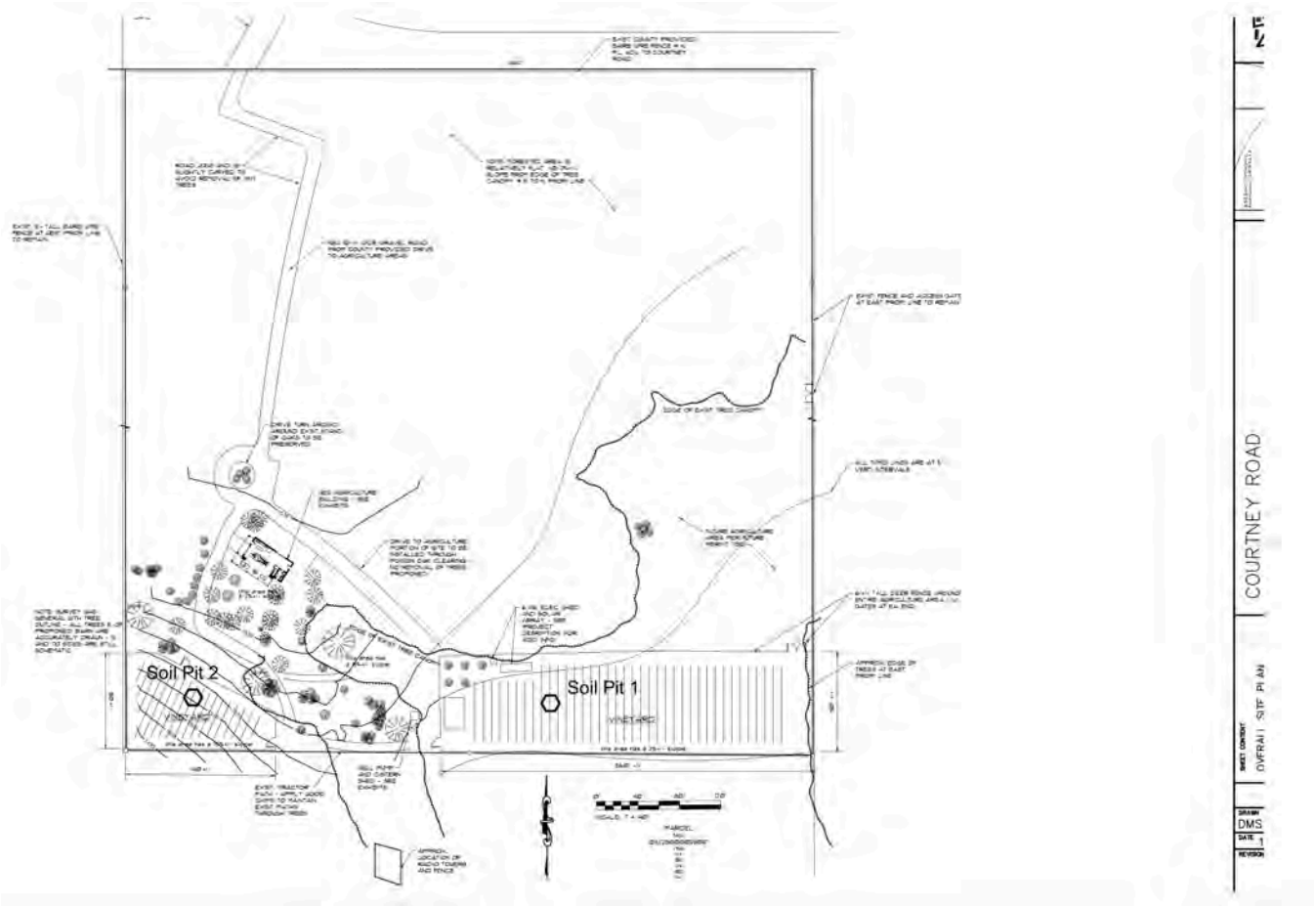
Site Suitability: Dave Spitzer created a proposed development map for the property that I include here.

More than three-quarters of the property is forested, and clearing mature forest for a small commercial grape vineyard would be economically impractical and would would dramatically alter the pastoral character of the land that Dave and Laurie love so much. Fortunately, the southern and southeastern parts of the property comprising perhaps 3 acres, are a weedy former dryland cattle pasture and as I will describe, are very well suited for a wine-grape vineyard, not the least reason for this is that no forest clearing is required.

As seen in the map below, two small vineyards totaling about 1 acre are proposed in the grassy/weedy former pasture area. The first positive site characteristic for conversion to vineyard is the roughly 1500-foot elevation of the 2 proposed vineyard blocks, since in Washington and Oregon east of the Cascades, the rule of thumb for many years has been that *vinifera* grapes can thrive at elevations up to about 2,000 feet, Above about 2,000 feet of elevation winter cold temperatures can be more severe

than below it, depending on local factors, and wine grapes may receive regular cold damage or even be killed above this threshold.

Additional positive site characteristics are that the 2 proposed vineyard blocks face to the south and southeast (see the ‘aspect’ data box in the field soil descriptions in Appendix 2), which are the best slope directions for vineyards in the northern hemisphere because those orientations maximize sunlight on the vine leaf canopy.



And one final positive site characteristic of the proposed vineyard areas is that in times of persistent stagnant high-pressure cold air masses in winter, cold air, which is more dense than warmer air, can fall away to lower elevations with little to impede it on the steep open south-facing slopes that fall all the way to the cColumbia River. A few degrees warmer air around the vines in winter can make a huge difference. For example, 5 degrees above zero F can leave a fully dormant grapevine undamaged or with only minor bud damage, whereas 0 degrees F may cause major damage or even trunk death. This hard won experience over the last 20 years or so of planting vineyards in higher elevation locations with free air flow to lower elevations have made sites like the ones under discussion here ideal sites for wine grapes in eastern Washington.

Soil Profile Suitability: As described above in the methods, one soil pit was dug in each of the potential vineyard areas and I described and photographed the two soils using standard methods. My notes are offered in Appendix 2.

The dominant soil in the area of the subject property is the DALIG SERIES as mapped by the Natural Resources Conservation Service (Soil Survey of the Klickitat County Area, Washington, 2009, accessed at **https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx** on September 15, 2023). The official soil series description for the Dalig soil is shown in Appendix 5. Dalig soils are in the Alfisol Soil Order (major worldwide soil groups). Alfisols are typical worldwide in mid latitude oak-pine-grass Savannas (as well as subtropical Savannas). Dalig soils were formed from windblown silt deposits called *loess* over fractured and weathered basalt on slopes.

The soil in site 1 in the southeastern part of the property matched the description of the Dalig soil almost perfectly (see Appendix 2, soil 1), with a dark brown topsoil or A (and AB) horizons with loam to silt loam textures from the surface to about 18 inches. And below that was a brown subsoil or clay enriched Bt horizon with slightly heavier clay loam textures from about 18 to greater than 48 inches. No stones were found on the surface and none were in the soil profile pit, making this soil well suited

by deep rooting depth and loamy textures to a variety of annual and perennial crop plants including wine grapes. A gentle southeast slope of about 10 % lends itself to cultivation.

The soil in the site 2 pit was similar to that at site 1 in general soil colors, textures and horizon sequence (Dark brown loam to silt loam A and AB horizons over a brown clay loam subsoil Bt horizon) with a rooting depth of about 60 inches. But also it differed in several ways (see Appendix 2, soil 2). First, it is on a steeper slope of about 35% and second, being on a steeper slope it has a few percent of basalt gravel on the surface and in the A horizon and the amount and size of gravel, cobbles and stones increases strongly with depth to about 50-60% stones and boulders at 60 inches.

Fortunately, grapes are very hardy plants and some of the most highly prized vineyards in the world are grown on gravelly and stony soils. The contrasting character of the soils in area 1 in the southeastern part of the property versus that in area 2 in the southwestern part of the property creates opportunities to plant different grape varieties and possibly on different rootstocks or using different training methods to create different character in the resulting wines.

Soil Lab Testing Results and Suitability: Each of the 2 soils were sampled at 2 depths: 0-12 inches and 12-24 inches and were sent to a certified agricultural soil testing lab for a comprehensive fertility panel. Results are in Appendix 3.

An exhaustive discussion of all the results in the tables in Appendix 3 id beyond the needs of this short letter report. In summary, all the the nutrients and elements analyzed in the 4 soil samples are within normal, expectable range with none being so high as to be toxic nor so low that light fertilization cannot produce healthy, thriving grapevines. Any micronutrients such as Born and Copper that are low in the soil can be mixed with fungicides in a tank or backpack sprayer and applied to the foliage. The table in Appendix 4 shows low, medium, and high or sufficiency levels for major elements and micronutrients for perennial crops east of the Cascade Mountains.

The pH of the soils is about 6, or slightly acidic, which is very good in that the uptake of micronutrients in particular, is strongly dependent on pH, with the optimum for uptake being from 6 to 7.

A critical positive in the production of grapes for fine wines is that Nitrate and Ammonium Nitrogen in the soils be low or very low, and the soils in the proposed vineyard areas are very low in both. This is because grapes are vining plants and if any more than small amounts of N are available in the soil by mis application or over application of Nitrogen fertilizers, or if a prior use was for a high N demanding crop such as field corn, the grapes will grow uncontrollably and can produce canes up to 10 feet or more long on each plant, when, at a plant spacing of 4 or 5 feet, canes only need to be about 2 to 4 feet long, depending on the training system.

Suitability of Site Climate and Growing Degree Days, Irrigation: No NWS weather stations exist near the Spitzer/Garber property; however, recording weather stations that ate available on the Weather Underground website (https://www.wunderground.com/), the WSU AgWeatherNet app (https://weather.wsu.edu/), plus 15 years if personal experience in the Columbia Gorge Area allowed me to estimate annual rainfall amounts and growing degree days (abbreviated GDD), which are also called Heat Units.

GDD is a unitless measure of growing- season daytime air temperature in the vine leaf canopy that is summed for each day from April 1 to October 31. This measure is used to estimate photosynthetic capability of grapevines in a location because the rate of photosynthetic chemical reactions (think sugar production in ripening grapes) is largely a function of air temperature during each day: the warmer the air around the leaves, the greater the photosynthetic rate. The higher the numerical value of GDD (which in practice ranges from a low of about 1800 GDD at higher elevation, cool and moist parts of Underwood Mountain to perhaps 3400 GDD in the the hottest, driest most cloud-free areas of the eastern Columbia Gorge such as at Maryhill.

Based on the position of the Spitzer/Garber property in the Cascade Range rain shadow gradient of heat and precipitation, I estimate the vineyards on this site, with excellent airflow and near- perfect solar gain, should be around 2700-3000 GDD. This should correspond in the world of wine grapes to the perfect GDD range to grow a large number of mid ripening wine grapes such as Syrah, Viognier,

Malbec, Merlot, Dolcetto, Sauvignon blanc, and many others. Thus the proposed sites are very well suited to grow a range of mid-ripening red and white wine grape varieties to high quality.

A rough estimate of mean annual precipitation at the Spitzer/Garber property is about 25 inches. This corresponds in many grape growers' minds to be an excellent amount of soil moisture, coming dominantly from November to May, to give grapes the water they need to get a great start from bud break through fruit set at which point supplemental irrigation from fruit set to harvest can lead to the best fruit quality.

Dave has told me that they installed a domestic well that, if memory serves, produces about 5 gallons per minute. In order to use this water to irrigate the approximately 1 acre of grapes, a storage system of some kind, probably with 5,000 to 10,000 gallon capacity will be necessary. Based on a vineyard with 8' rows and 5' spacing between plants, one acre of vines contains about 892 plants. Mid summer, they may require about 6 gallons of water per week per plant (and up to 12 gallons per plant during extreme heat events).

To irrigate them with 6 or 12 gallons per week would require about 6,000 up to 12,000 gallons per week. Calculating a delivery rate of 5 gallons per minute times 1440 minutes per day, the well would produce up to 7,200 gallons of water per day, meaning that with a storage system, the well could produce in one to two days the water needed for one week. Thus a simple set of calculations suggests that the domestic well could support the irrigation needs ot the proposed vineyard.

Summary: This letter report summarizes the results of a simple study of a 9.4+/- acre property on Courtney Road where owners Dave Spitzer and Laurie Garber wish to plant wine grapes and make wine at a small commercial scale. To conclude, the slopes and aspect and air drainage of the proposed vineyard blocks are great for wine grapes from a vineyard siting perspective and would not require any tree removal as the areas are weedy former cattle grazing areas. Soils are near ideal for wine grapes in texture, potential rooting depth, and composition. Degree days are in range to offer the potential to grow a wide range of mid to mid-late ripening red and wine wine grape varieties. Rainfall will supply perhaps 2/3 to 100% of the stored soil moisture needed to grow wine grapes of high quality for wine and a domestic well can supplement water needs from mid season to harvest if a storage system is developed.

Signed

Alan Busacca, Ph.D.
Vinitas Vineyard Consultants, LLC

APPENDIX 1. RESUME

ALAN BUSACCA, PH.D.

PROFESSIONAL POSITIONS:

2018-present	**Independent Advisor,** Peoples Company-Agribusiness Trading Group, Des Moines IA & Walla Walla WA
2006-present	**Manager/Owner**, Vinitas Consultants, LLC, Bingen, WA
2008-present	**Co-Owner**, Windhorse Vineyard, The Dalles, OR; 35-acre vyd on 160 acres of Oak Savannah
2018--present	**Co-Owner**, Capital Call Vintners (Windhorse & Capital Call wine brands), OR-WA
2013-2014	**Director**, Center for Enology & Viticulture, Walla Walla Community College
2007-2008	**Field Geologist** on Contract, Colorado Geological Survey, Denver, CO: geol. mapping Pikes Peak and Steamboat Springs areas, CO
1982-2007	**Professor** of Soil Science & Adjunct Professor of Geology, Depts. of Crop & Soil Sciences and Geology, Washington State University, Pullman, WA
1977-1982	**Research Assoc. M.S. & Ph.D. Soil Science**, Dept. Land, Air, & Water Res., Cal. Davis
1974-1977	**Field Geologist**, U.S. Geol. Survey, Menlo Park, CA; geol. mapping Yosemite Nat'l Park & area

EDUCATION:

Ph.D.	Soil Science	1982	University of California, Davis
M.S.	Soil Science	1979	University of California, Davis
B.S.	Earth Science w/Honors	1973	University of California, Santa Cruz

SKILLS AND EXPERIENCE:

- ***As Owner and Manager of Vinitas Consultants***, I evaluate agricultural land for clients nationally and internationally to advise them on soil and site characteristics and agronomy, including:
  - **Evaluating lands** for clients; pre-purchase & pre-sale evaluations for existing vineyards or vineyard & orchard site development potential
  - **Preparing detailed site analysis** for vineyard & other agricultural land development
  - **Preparing petitions** to the U.S. TTB on behalf of grape growers for new AVAs. Petitions approved: Wahluke Slope, Lake Chelan, Lewis-Clark Valley (ID-WA), Royal Slope (WA), Goose Gap (WA) & others
  - **Mapping & evaluating hydric soils** in wetlands on private lands; assisting mitigation efforts and defending against claims of wetland damage
- ***As Co-Owner Partner of Windhorse Vineyard***, I make weekly, annual, & long-range decisions on farming, financial management, & marketing of the fruit from our 160-acre (65ha) property with 35-acres (14ha) of *vinifera* grapes, Columbia Gorge AVA, OR. Certified sustainable ***LIVE & Salmon Safe*** since 2013
- ***As Co-Owner of Capital Call Vintners,*** we make small lots of premium Pinot noir, Syrah, Cabernet Sauvignon & other wines to showcase our partner vineyards' fruit for consumers & clients
- ***As Director*** of the 2-year degree program in ***Enology and Viticulture at Walla Walla Community College***, I directed the 2-year Enology and Viticulture program and served also as General Manager of College Cellars, the program's award-winning 3,000-case bonded winery
- ***As Owner of AlmaTerra Wines 2008-2012***, I made strategic & financial decisions. Responsible for branding & marketing & designed, built, & managed wine bar/tasting room in Bingen, WA
- ***As research professor at WSU***, I ran a field and laboratory research program on soil processes, soil erosion control from farming, and Northwest Ice-Age geology, geomorphology, & landscape history. Each year I managed 2-4 research grants of $100k+ each & up to 6 grad students & research techs. I was awarded about $2.5 million in grants from National Science Foundation, US EPA,& USDA & other agencies

VINITAS CONSULTANTS, LLC

SELECTED CONSULTING PROJECTS 2005-2023:

2023	**Private Vineyard-Winery Client**, Parkdale, OR: Site evaluation on 40+ac (16+ha), sparkling wine vyd
2011-present	**Kagel Environmental**, Rigby, ID: Soils specialist on hydric soils determinations and Wetland delineations; 30+ projects covering 15 states
2021-2022	**Sunset Valley Vineyards,** Nyssa, OR, Snake River Valley AVA: Site evaluation for new vineyard on 115 ac (45 ha) property for ultra-premium Oregon wine brand
2018-2022	**VFO Walla Walla**, Walla Walla Valley: Advisor for vyd and orchard dev. to new owner, 6,000ac farm
2015-2021	**Royal Slope Winegrowers**: Petition for **Royal Slope** American Viticultural Area (AVA; approved 10/2/2020), and Goose Gap Area Winegrowers: Petition for **Goose Gap AVA** (approved 7/1/2021)
2020	**Claar Cellars,** Pasco WA: 130 ac (50 ha) vineyard site evaluation for bankruptcy defense
2016-2018	**Private Farming Client,** Walla Walla Valley, WA**:** Viticultural/orchard/permanent crop land evaluation, parcel quality ratings, and assistance with marketing and sale, 6,000 acres (2,400 ha) of potential vineyard/orchard land w/ more than 5,000 ac-ft (>6,150,000 m^3) of irrigation water from 4 deeps wells
2016-2017	**Kennewick Irrigation District**, Benton City, WA: Site evaluation for vineyard development, parcels totaling 400 ac (160 ha), Columbia Valley AVA (American Viticultural Area), WA
2012–2021	**Acquest Dev.** & Wm Huntress, Buffalo NY: Expert witness for defense of EPA/DOJ wetlands lawsuit
2016-2017	**Martin Family Vineyards**, Adrian OR: 50 acre (20 ha) site evaluation, premium wine-grape vineyard
2015-2016	**Epperson Associates**, LLC, Salt Lake City, UT: Hydric soils determination for wetland delineation, 2400 ac (950 ha) site for new Utah State prison
2015	**Bavaro Farming**, Inc., Waterford, CA: Land evaluation for 245 ac (100 ha) almond orchard dev.
2014-2016	**Idaho Wine Commission**: Research on soils and climate, Snake River Valley AVA, Nampa, ID
2014-2015	**Weathereye Vineyard**, Benton City, WA: Soil and site quality evaluation for ultra premium vineyard development, 300 acres (120ha), Red Mountain AVA (https://www.weathereyevineyard.com/)
2012, 2013	**Ste. Michelle Wine Estates**: Presented seminars for SMWE winemakers, viticulture field staff, & marketing staff on site-specific *terroir* factors and vineyard quality in WA State
2011-2013	**Winegrowers of the Lewis-Clark Valley,** ID-WA: Petition to TTB to establish the **Lewis-Clark Valley AVA**. Adopted May 20, 2016. Also petitions for the **Lake Chela**n (2010) & **Wahluke Slope** (2006) AVAs
2009-2011	**Kennewick Irrigation District**, Benton City, WA: Site evaluation and quality ratings matrix of parcels totaling 800 ac (325 ha) for vineyard development, Red Mountain AVA. Auction sale to the ***Aquilini Group, Vancouver, B.C., Canada*** totaled over $16 million; now fully planted to premium Cabernet sauvignon
2007-2008	**Premier Pacific**, Napa, CA (vineyard REIT): Pre-purchase eval., 3900 ac (1600 ha) orchard, vineyard, and row crop farm in the Horse Heaven Hills AVA, WA
2007-2008	**Jon Staenberg**, Seattle, WA: Evaluation of land & business plan for 2,000 ac (800 ha) vineyard dev., ***Uco Valley, Argentina*** (http://www.vinesofmendoza.com/)
2005-2006	**Sevein Vineyard Partners**: Walla Walla Valley AVA; site eval for 2,000 ac (800 ha) vineyard development (http://seveinvineyards.com/)

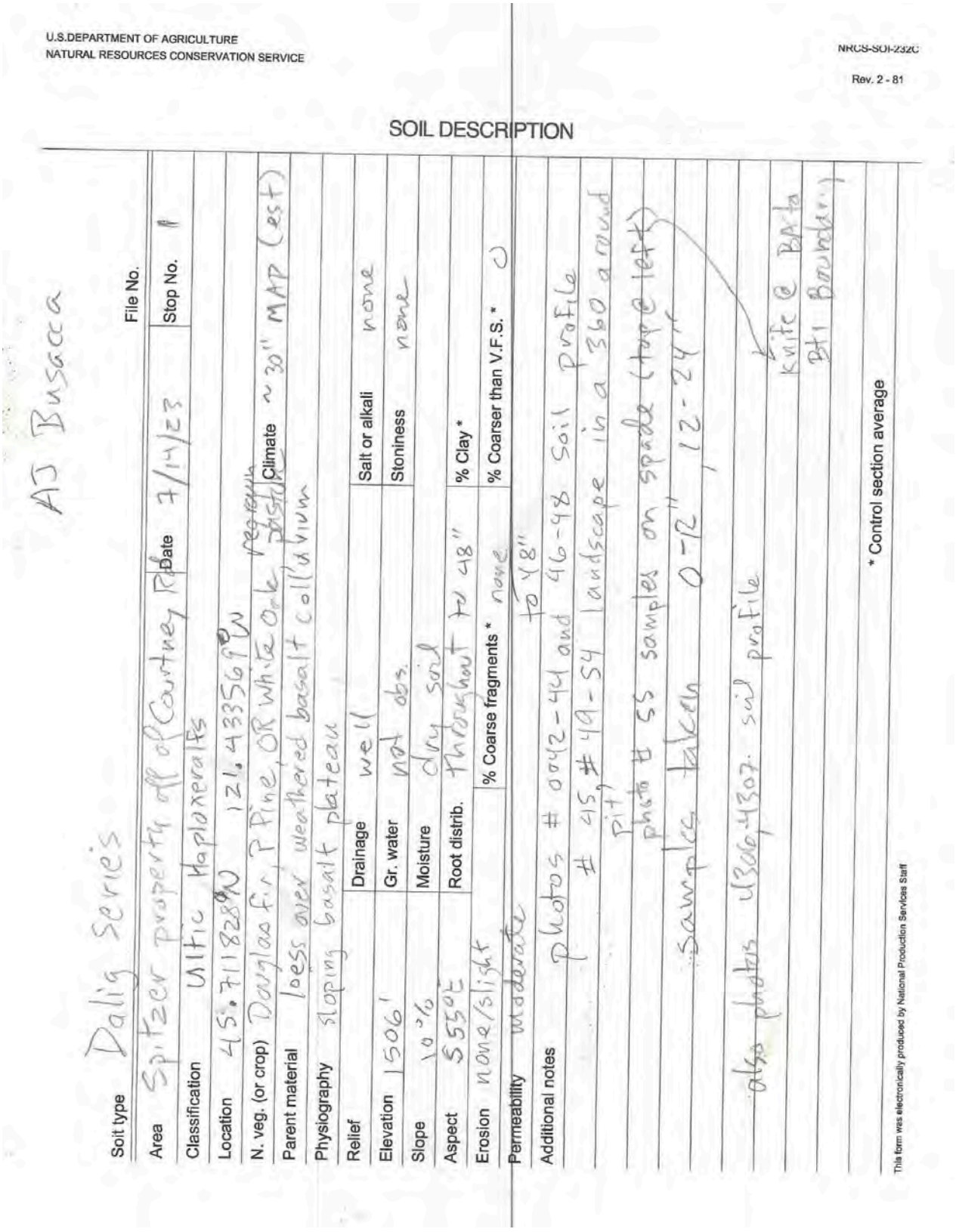
AT WASHINGTON STATE UNIVERSITY:

- **Major Advisor** of 10 Master's Degree, 5 Ph.D., and 7 post-Masters and post-Doctoral fellows
- **Main courses taught**: Soils 360/Crops 360 - World Agricultural Systems; Soils 451 - Pedology; Soils 551 - Advanced Pedology; Hort 413/513 - Advanced Viticulture
- **Senior author or co-author** of 50 refereed research journal articles, 6 book chapters, 1 book editorship, 7 serial pubs, 13 field trip guides, 8 symposium proceedings, 12 other publications, & 80 abstracts

SELECTED PUBLICATIONS (more than 100 total):

- Wilkins, David, Alan Busacca, and Clyde Northrup. 2016. Investigation of *Terroir* Factors, Sunnyslope District, Snake River Valley AVA. Proceedings of the 11th International *Terroir* Congress 2016, July 10-14, McMinnville, Oregon (USA).
- McDonald, Eric V. , Mark R. Sweeney, Alan J. Busacca. 2012. Glacial outburst floods and loess sedimentation documented during Oxygen Isotope Stage 4 on the Columbia Plateau, Washington State. Quaternary Science Reviews 45 (2012):18-30.
- Busacca, Alan J. and Lawrence D. Meinert. 2003. Wine and Geology – The *terroir* of Washington State. pp. 69-85, In T.W. Swanson (ed), Western Cordillera and adjacent areas. Geological Soc. Am. Field Guide 4.
- Meinert, L.D., and A.J. Busacca. 2002. Geology and Wine 6: *Terroir* of the Red Mountain Appellation, Central Washington State, U.S.A. Geoscience Canada 29:149-168 and Meinert, L. D., and A. J. Busacca. 2000. Geology and wWne 3: *Terroirs* of the Walla Walla Valley Appellation, southeastern Wash. State, USA. Geosci. Canada 27(4): 149-171.
- Busacca, Alan J. 1991. Loess deposits and soils of the Palouse and vicinity. pp. 216-228, In Baker, V. R., and others. The Columbia Plateau, Ch. 8, In Morrison, R. B. (ed.) Quaternary Non-Glacial Geology of the United States. Geological Society of America Geology of North Am.
- McCool, D. K., and A. J. Busacca. 1999. Measuring and modeling soil erosion and erosion damages. pp. 23-56, In E. L. Michalson, R. I. Papendick, and J. E. Carlson (eds.), Conservation Farming in the United States. CRC Press, New York.
- Boling, M., B. Frazier, and Alan Busacca. 1998. General Soil Map, Washington. USDA Natural Resources Conservation Service and Department of Crop and Soil Sci, WSU, Pullman. 1:750,000.

APPENDIX 2. FIELD SOIL DESCRIPTIONS.



U.S.DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

NRCS-SOI-232C
Rev. 2 - 81

SOIL DESCRIPTION

AJ Busacca

Soil type Daly Series
File No.
Area Spitzer property off of Courtney Rd Date 7/14/23 Stop No. 1
Classification Vitic Haploxeralfs
Location 45°.711828°N 121.433569°W
N. veg. (or crop) Douglas fir, P Pine, OR White Oak, pasture Climate ~30" MAP (est)
Parent material loess over weathered basalt colluvium
Physiography sloping basalt plateau
Relief
Drainage well
Salt or alkali none
Elevation 1506'
Gr. water not obs.
Stoniness none
Slope 10 %
Moisture dry soil
Aspect S55°E
Root distrib. throughout to 48"
% Clay *
Erosion none/slight
% Coarse fragments * none
% Coarser than V.F.S. * 0
Permeability moderate to 48"
Additional notes Photos # 0042-44 and 46-98 soil profile
45, # 49-54 landscape in a 360 around Pit
Photo # 55 samples on spade (top @ left)
Samples taken 0-12", 12-24"
also photos 4307. soil profile
knife @ BA/Bt1
Bt1 Boundary

* Control section average

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Spitzer - 1 7/14/23 AJ Busacca

Horizon	Depth in	Color Dry	Color Moist	Texture	Structure	Consistence Dry	Consistence Moist	Consistence Wet	Reaction	Boundary	clay films	
							Roots					
A	0-6		7.5YR 3/2	L-SiL	3vF gr		3vf,f			cs	-	all fecal pellets etc
BA	6-18		7.5YR 3/3	L	2m&c sbk		3vf,f			gw	-	coarse tubular pores filled with fecal pellets
Bt1	18-32		7.5YR 4/3	CL	3c sbk		2vf,f			dw	2mk pf&d	
Bt2	32-46"+			Cl	3c sbk		1vf,f			-	3k pf&d	

AJ Busacca

Soil type	Dalig stony variant		File No.
Area	Spitzer	Date 7/14/23	Stop No. 2
Classification	Ultic Haploxeralfs		
Location	45.711835°N 121.434398°W		
N. veg. (or crop)	weedy hillslope pasture	Climate	~ 30" MAP (est)
Parent material	loess over spheroidally weathered basalt		
Physiography	plateau falling to cliffs		
Relief	moderate	Drainage well	Salt or alkali none
Elevation	1510'	Gr. water not observed	Stoniness 5% surface
Slope	35%	Moisture dry soil	
Aspect	S 10° W	Root distrib. throughout to 60"	% Clay *
Erosion	strong slope erosion if unprotected	% Coarse fragments * 20-30%	% Coarser than V.F.S. *
Permeability			

Additional notes

photos # 56-58 & 62-64 soil profile
59-61 landscape around
also photos 4316-4317 soil profile
and 4308-4315 of field around Spitzer-2

samples taken
0-12" & 12-24"

colluvial robble of basalt has spheroidal weathering (see "boulder" in photos from 24-36"

* Control section average

This form was electronically produced by National Production Services Staff

SOIL DESCRIPTION

VINITAS CONSULTANTS, LLC

Spitzer-2 AJ Busacca

Horizon	Depth	Color Dry	Color Moist	Texture	Structure	Consistence Dry	Consistence Moist	Consistence Wet	Reaction	Boundary
A	0-12		7.5YR 3/2	L-SIL	2 m sbk	5% to 4" Stones				gs
AB	12-24		7.5YR 4/3	vgr 1/2 ST Lt	1 f	20-25% to 10"				gw
Bt	24-60		7.5YR 4/4	Ext ST+ CL-	3m sbk	50-60% stones and boulders to 3'				Boulders –

APPENDIX 3. ANALYSIS DATA FOR SAMPLED SOILS

Western Laboratories, Inc.
211 Highway 95 • Parma, ID 83660
208-649-4360 • FAX 208-402-5303
http://www.westernlaboratories.com
Methods: www.westernlaboratories.com/soil.htm
AGRICULTURAL SOIL REPORT

Soil PAP NAPT 2023

Dealer: Pd Alan
Reported: 8-2-2023
Test #: 1T
Grower: Dave And Laurie Spitzer
Field ID: Spitzer-1 0-12"

Lab #: 13934

ELEMENT	YOUR RESULTS	INTERP	SHOULD BE
pH-Your Soil	6.4	Slightly Acidic	
pH-Buffer*	6.9	Neutral Soil	
Soluble Salts Ec-mmhos/cm	0.22	Optimum	< 1.5
% Lime Ca CO3	0.0	No crusting expected	
% Organic Matter-LOI	2.75	Medium	
Nitrates-ppm N03-N	2	Very Low	10 - 35
Ammonium-ppm NH4-N	4	Low	5 +
Phosphorus-ppm Olsen-P	45	High	25 - 40
Phos-ppm Bray-P*	84	Optimum	50 - 100
Potassium-ppm K	287	Low	300 +
Sulfates-ppm S04-S	13	Low	20 +
Calcium-ppm Ca	1243	Very Low	1,800 +
Magnesium-ppm Mg	104	Very Low	250 +
Sodium-ppm Na	49	Optimum	< 225
Zinc-ppm Zn	1.3	Optimum	1.0 - 3.0
Copper-ppm Cu	0.8	Low	0.8 - 2.5
Manganese-ppm Mn	7	Optimum	6 - 15
Iron-ppm Fe	51	High	25 +
Boron-ppm B	0.4	Low	0.7 - 1.5

Ratio	Yours	Ideal	Watch
Ca:P pH >7	:1	100:1	
Ca:Mg	12:1	6-20:1	
Ca:P pH <7	28:1	40:1	
P:Zn	35:1	15:1	Watch Zn

	NO3 ppm	NH4 ppm
1 Ft	2	4
2 Ft		
3 Ft		
Total PPM		6
Lbs N / Acre*		18
Your Texture		
% Base Saturation		52

CATION BASES	IDEAL	YOUR % BASES
CALCIUM % of CEC	65-80	40
MAGNESIUM % of CEC	10-20	6
POTASSIUM % of CEC	2-6	5
SODIUM % of CEC	< 5	1
HYDROGEN % of CEC	< 15	48
CEC	15	

FERTILIZER SUGGESTIONS IN POUNDS/ACRE BASED ON YOUR CROP & YIELD GOAL

Crop	Wine Grapes		Your Notes
Yield Goal	10 Tons		
Past Crop	Fallow		
Acres	.66		
Nitrogen	102		
Phosphate			
Potash	113		
Sulfate	34		
Elem-S			
Gypsum			
Lime	800		
Dolomite	1000		
Magnesium	10	10	
Zinc	7		
Manganese	1		
Copper	1		
Boron	1		

-LOI: Loss of Ignition *CEC-Cation Exchange Capacity
*For acid soils pH <6.5 *Phosphate-P205 / Potash-K20
-Split apply Nitrogen fertilizer *Add 15 pounds N/Ton Stubble
-Nitrogen (N) Sulfates and Boron (B) recs are for this crop year at your yield
-Other nutrient recs can be split over 2- years. Work with your crop advisor
Elemental Sulfur = Reclamation Sulfur P.F. Sulfur = Plant Food Sulfur

PPM K / 390 = Meq PPM Mg / 120 = Meq
PPM Ca / 200 = Meq PPM Na / 230 = Meq

"Always practice the laws of Agronomy. Obey the rules of biology, chemistry and physics." - John P. Taberna, Soil Scientist

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http://www.westernlaboratories.com
Methods: www.westernlaboratories.com/soil.htm

AGRICULTURAL SOIL REPORT

Dealer: Pd Alan
Reported: 8-2-2023
Test #: 4T
Grower: Dave And Laurie Spitzer
Field ID: Spitzer-1 12-24"

Lab #:
13935

ELEMENT	YOUR RESULTS	INTERP	SHOULD BE
pH-Your Soil	6.3	Slightly Acidic	
pH-Buffer*	6.9	Neutral Soil	
Soluble Salts Ec-mmhos/cm	0.14	Optimum	< 1.5
% Lime Ca CO3	0.0	No crusting expected	
% Organic Matter-LOI	1.70	Low	
Nitrates-ppm N03-N	3	Very Low	10 - 35
Ammonium-ppm NH4-N	4	Low	5 +
Phosphorus-ppm Olsen-P	26	Optimum	25 - 40
Phos-ppm Bray-P*	59	Optimum	50 - 100
Potassium-ppm K	221	Low	300 +
Sulfates-ppm S04-S	13	Low	20 +
Calcium-ppm Ca	1181	Very Low	1,800 +
Magnesium-ppm Mg	94	Very Low	250 +
Sodium-ppm Na	54	Optimum	< 225
Zinc-ppm Zn	0.4	Very Low	1.0 - 3.0
Copper-ppm Cu	1.0	Optimum	0.8 - 2.5
Manganese-ppm Mn	4	Low	6 - 15
Iron-ppm Fe	47	Optimum	25 +
Boron-ppm B	0.3	Very Low	0.7 - 1.5

Ratio	Yours	Ideal	Watch
Ca:P pH >7	:1	100:1	
Ca:Mg	13:1	6-20:1	
Ca:P pH <7	45:1	40:1	Watch P
P:Zn	65:1	15:1	Watch Zn

	NO3 ppm	NH4 ppm
1 Ft	3	4
2 Ft		
3 Ft		
Total PPM		7
Lbs N / Acre*		21
Your Texture		
% Base Saturation		53

CATION BASES	IDEAL	YOUR % BASES
CALCIUM % of CEC	65-80	42
MAGNESIUM % of CEC	10-20	6
POTASSIUM % of CEC	2-6	4
SODIUM % of CEC	< 5	2
HYDROGEN % of CEC	< 15	47
CEC	14	

FERTILIZER SUGGESTIONS IN POUNDS/ACRE BASED ON YOUR CROP & YIELD GOAL

Crop	Wine Grapes		Your Notes
Yield Goal	10 Tons		
Past Crop	Fallow		
Acres	.66		
Nitrogen	99		
Phosphate	55		
Potash	179		
Sulfate	34		
Elem-S			
Gypsum			
Lime	800		
Dolomite	1200		
Magnesium	10	10	
Zinc	10		
Manganese	7		
Copper			
Boron	2		

-LOI: Loss of Ignition *CEC-Cation Exchange Capacity
*For acid soils pH <6.5 *Phosphate-P205 / Potash-K20
-Split apply Nitrogen fertilizer *Add 15 pounds N/Ton Stubble
-Nitrogen (N) Sulfates and Boron (B) recs are for this crop year at your yield
-Other nutrient recs can be split over 2- years. Work with your crop advisor
Elemental Sulfur = Reclamation Sulfur P.F. Sulfur = Plant Food Sulfur

PPM K / 390 = Meq PPM Mg / 120 = Meq
PPM Ca / 200 = Meq PPM Na / 230 = Meq

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AGRICULTURAL SOIL REPORT

Soil PAP NAPT 2023

Dealer: Pd Alan
Reported: 8-2-2023
Test #: 1T
Grower: Dave And Laurie Spitzer
Field ID: Spitzer-2 0-12"

Lab #:
13936

ELEMENT	YOUR RESULTS	INTERP	SHOULD BE
pH-Your Soil	6.1	Slightly Acidic	
pH-Buffer*	6.9	Neutral Soil	
Soluble Salts Ec-mmhos/cm	0.16	Optimum	< 1.5
% Lime Ca CO3	0.0	No crusting expected	
% Organic Matter-LOI	3.01	Medium	
Nitrates-ppm N03-N	2	Very Low	10 - 35
Ammonium-ppm NH4-N	5	Low	5 +
Phosphorus-ppm Olsen-P	10	Very Low	25 - 40
Phos-ppm Bray-P*	26	Low	50 - 100
Potassium-ppm K	193	Low	300 +
Sulfates-ppm S04-S	15	Low	20 +
Calcium-ppm Ca	1211	Very Low	1,800 +
Magnesium-ppm Mg	174	Low	250 +
Sodium-ppm Na	52	Optimum	< 225
Zinc-ppm Zn	0.7	Low	1.0 - 3.0
Copper-ppm Cu	0.9	Optimum	0.8 - 2.5
Manganese-ppm Mn	9	Optimum	6 - 15
Iron-ppm Fe	41	Optimum	25 +
Boron-ppm B	0.3	Very Low	0.7 - 1.5

Ratio	Yours	Ideal	Watch
Ca:P pH >7	:1	100:1	
Ca:Mg	7:1	6-20:1	
Ca:P pH <7	121:1	40:1	Watch P
P:Zn	14:1	15:1	

	NO3 ppm	NH4 ppm
1 Ft	2	5
2 Ft		
3 Ft		
Total PPM		7
Lbs N / Acre*		21
Your Texture		
% Base Saturation		53

CATION BASES	IDEAL	YOUR % BASES
CALCIUM % of CEC	65-80	39
MAGNESIUM % of CEC	10-20	9
POTASSIUM % of CEC	2-6	3
SODIUM % of CEC	< 5	2
HYDROGEN % of CEC	< 15	47
CEC	15	

FERTILIZER SUGGESTIONS IN POUNDS/ACRE BASED ON YOUR CROP & YIELD GOAL

Crop	Wine Grapes		Your Notes
Yield Goal	10 Tons		
Past Crop	Fallow		
Acres	.33		
Nitrogen	99		
Phosphate	167		
Potash	207		
Sulfate	30		
Elem-S			
Gypsum			
Lime	800		
Dolomite	500		
Magnesium	10	10	
Zinc	9		
Manganese			
Copper			
Boron	2		

-LOI: Loss of Ignition *CEC-Cation Exchange Capacity
*For acid soils pH <6.5 *Phosphate-P205 / Potash-K20
-Split apply Nitrogen fertilizer *Add 15 pounds N/Ton Stubble
-Nitrogen (N) Sulfates and Boron (B) recs are for this crop year at your yield
-Other nutrient recs can be split over 2- years. Work with your crop advisor
Elemental Sulfur = Reclamation Sulfur P.F. Sulfur = Plant Food Sulfur

PPM K / 390 = Meq PPM Mg / 120 = Meq
PPM Ca / 200 = Meq PPM Na / 230 = Meq

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AGRICULTURAL SOIL REPORT

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pH-Buffer*	6.9	Neutral Soil	
Soluble Salts Ec-mmhos/cm	0.16	Optimum	< 1.5
% Lime Ca CO3	0.0	No crusting expected	
% Organic Matter-LOI	3.01	Medium	
Nitrates-ppm N03-N	2	Very Low	10 - 35
Ammonium-ppm NH4-N	5	Low	5 +
Phosphorus-ppm Olsen-P	10	Very Low	25 - 40
Phos-ppm Bray-P*	26	Low	50 - 100
Potassium-ppm K	193	Low	300 +
Sulfates-ppm S04-S	15	Low	20 +
Calcium-ppm Ca	1211	Very Low	1,800 +
Magnesium-ppm Mg	174	Low	250 +
Sodium-ppm Na	52	Optimum	< 225
Zinc-ppm Zn	0.7	Low	1.0 - 3.0
Copper-ppm Cu	0.9	Optimum	0.8 - 2.5
Manganese-ppm Mn	9	Optimum	6 - 15
Iron-ppm Fe	41	Optimum	25 +
Boron-ppm B	0.3	Very Low	0.7 - 1.5

Ratio	Yours	Ideal	Watch
Ca:P pH >7	:1	100:1	
Ca:Mg	7:1	6-20:1	
Ca:P pH <7	121:1	40:1	Watch P
P:Zn	14:1	15:1	

	NO3 ppm	NH4 ppm
1 Ft	2	5
2 Ft		
3 Ft		
Total PPM		7
Lbs N / Acre*		21
Your Texture		
% Base Saturation		53

CATION BASES	IDEAL	YOUR % BASES
CALCIUM % of CEC	65-80	39
MAGNESIUM % of CEC	10-20	9
POTASSIUM % of CEC	2-6	3
SODIUM % of CEC	< 5	2
HYDROGEN % of CEC	< 15	47
CEC	15	

FERTILIZER SUGGESTIONS IN POUNDS/ACRE BASED ON YOUR CROP & YIELD GOAL

Crop	Wine Grapes		Your Notes
Yield Goal	10 Tons		
Past Crop	Fallow		
Acres	.33		
Nitrogen	99		
Phosphate	167		
Potash	207		
Sulfate	30		
Elem-S			
Gypsum			
Lime	800		
Dolomite	500		
Magnesium	10	10	
Zinc	9		
Manganese			
Copper			
Boron	2		

-LOI: Loss of Ignition *CEC-Cation Exchange Capacity
*For acid soils pH <6.5 *Phosphate-P205 / Potash-K20
-Split apply Nitrogen fertilizer *Add 15 pounds N/Ton Stubble
-Nitrogen (N) Sulfates and Boron (B) recs are for this crop year at your yield
-Other nutrient recs can be split over 2- years. Work with your crop advisor
Elemental Sulfur = Reclamation Sulfur P.F. Sulfur = Plant Food Sulfur

PPM K / 390 = Meq PPM Mg / 120 = Meq
PPM Ca / 200 = Meq PPM Na / 230 = Meq

"Always practice the laws of Agronomy. Obey the rules of biology, chemistry and physics." - John P. Taberna, Soil Scientist

APPENDIX 4. SOIL TEST INTERPRETATION TABLE.

Table 2. Soil Test Interpretation Table - East of the Cascade Mountains[1]

Nutrient	Low	Medium	High or Sufficient	Excessive
Nitrate N (ppm[2])	<10	10-20	20-30	>30
Potassium (ppm)	<150	150-250	250-800	>800
Phosphorus (ppm)	<10	10-20	20-40	>40
Sulfate Sulfur (ppm)	<2	2-10	>10	-
DTPA Iron[3] (ppm)	<2.5	2.5-4.5	>4.5	-
Boron (ppm)	<0.5	0.5-2	>2	-
Zinc (ppm)			>1	
Manganese			>1.5	
Copper (ppm)			>0.6	

[1] Marx, E S, J Hart, and R G Stevens. 1999. Soil Test Interpretation Guide. EC 1478, Oregon State University Extension Service, Corvallis.

APPENDIX 5. DALIG SOIL OFFICIAL SOIL SERIES DESCRIPTION.

LOCATION DALIG WA
Established Series
Rev. JH/TLA/RWL
11/2008

DALIG SERIES

The Dalig series consists of very deep, well drained soils formed in loess mixed with colluvium and residuum derived from basalt. Dalig soils are on hillslopes, plateaus and benches. Slopes are 2 to 65 percent. The mean annual precipitation is about 32 inches and the mean annual temperature is about 46 degrees F.
TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ultic Haploxeralfs

TYPICAL PEDON: Dalig loam - forested on an 11 percent southwest-facing backslope at an elevation of 2,280 feet. (Colors are for dry soil unless otherwise noted.)

Oi--0 to 1 inches; needles, leaves, and twigs.

Oe--1 to 2 inches; decomposed organic material.

A--2 to 6 inches; reddish brown (5YR 5/3) loam, dark reddish brown (5YR 3/3) moist; weak fine and very fine granular structure; soft, friable, slightly sticky and nonplastic; many very fine and common fine roots; many very fine irregular pores; 10 percent gravel; slightly acid (pH 6.2); clear smooth boundary. (3 to 6 inches thick)

BA--6 to 17 inches; light brown (7.5YR 6/4) loam, dark reddish brown (5YR 3/3) moist; weak fine and very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine and few medium roots; many very fine irregular and many very fine tubular pores; 3 percent gravel; slightly acid (pH 6.2); gradual; smooth boundary. (0 to 14 inches thick)

Bt1--17 to 31 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 4/4) moist; weak fine and very fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and few fine and medium roots; many very fine irregular and common fine and very fine tubular pores; few faint clay films on faces of peds and in pores; 3 percent gravel; slightly acid (pH 6.2); gradual smooth boundary. (12 to 16 inches thick)

Bt2--31 to 52 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate fine and very fine subangular blocky structure; hard, firm, moderately sticky and very plastic; few fine roots; many very fine irregular and common fine tubular pores; few distinct clay films on faces of peds and in pores; 5 percent gravel; moderately acid (pH 6.0); gradual smooth boundary. (15 to 22 inches thick)

BCt--52 to 62 inches; brown (7.5YR 5/4) paragravelly clay loam, brown (7.5YR 4/4) moist; weak fine and very fine subangular blocky structure; hard, firm, moderately sticky and

following the summer solstice
Fordcreek soils 40 to 60 inches to paralithic contact (granitic); dry for 75 to 110 consecutive days following the summer solstice
Gunn soils dry for 90 to 105 consecutive days following the summer solstice
Hood soils pscs lacks rock fragments; silty and loamy lacustrine origin
Latourell soils mean annual soil temperature is 54 to 56 degrees F.; 40 to 60 inches to 2C discontinuity with 25 to 60 percent rounded gravel; 10YR hue throughout
Lettia soils 40 to 60 inches to lithic contact (granodiorite); dry for 45 to 60 consecutive days following the summer solstice
Norling soils 20 to 40 inches to paralithic contact (metavolcanic); dry for 45 to 60 consecutive days following the summer solstice
Para soils dry for 45 to 60 consecutive days following the summer solstice; pscs has 15 to 45 percent basalt parafragments
Pishpishee soils dry for 80 to 100 consecutive days following the summer solstice; pscs has 10 to 30 percent rock fragments of metasedimentary origin
Rosehaven soils dry for 45 to 60 consecutive days following the summer solstice; mean annual soil temperature of 52 to 57 degrees F.
Sanhedrin soils 40 to 60 inches to lithic contact (sandstone and siltstone); dry for 90 to 120 consecutive days following the summer solstice
Tigit soils 20 to 40 inches to paralithic contact (basalt)
Varelum soils 40 to greater than 60 inches to paralithic contact (sandstone); pscs has 0 to 5 percent rock fragments of sandstone origin
Wildwohly soils unable to compete; no OSD in database
Wohly soils 20 to 40 inches to C horizon consisting of highly weathered bedrock; dry for 90 to 120 consecutive days following the summer solstice; mean annual soil temperature of 54 to 59 degrees F.

GEOGRAPHIC SETTING: Dalig soils are on hillslopes, plateaus and benches at elevations of 1,000 to 2,500 feet. Slopes are 2 to 65 percent. Dalig soils formed in loess mixed with colluvium and residuum derived from basalt. Summers are warm and dry, winters are cool and moist with snow cover from December through April. The mean annual precipitation is 30 to 35 inches. The average January temperature is 27 degrees F. and the average July temperature is 65 degrees F. The mean annual temperature is 45 to 48 degrees F. The frost-free season is 100 to 120 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Kaiders, Leidl, Wahoo, Yedlick, and the competing Gunn, Para and Tigit soils. Kaiders, Leidl, and Yedlick soils are loamy-skeletal. Tigit soils have a paralithic contact at 20 to 40 inches. Wahoo soils are loamy-skeletal and are 10 to 20 inches deep to a lithic contact.

DRAINAGE AND PERMEABILITY: Well drained; slow to medium runoff; moderately slow permeability.

USE AND VEGETATION: These soils are used mainly for timber production, grazeable woodland, and wildlife habitat. Native vegetation is mainly Douglas-fir, ponderosa pine and Oregon white oak with an understory of creambush oceanspray, willow, western hazel, deerbrush ceanothus, common snowberry, Oregon-grape, and elk sedge.

or 5Y throughout argillic horizon
Fong soils 40 to 60 inches to lithic contact (black schist); dry for 90 to 120 consecutive days

DISTRIBUTION AND EXTENT: Klickitat County, Washington; MLRA 6. The series is of small extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Portland, Oregon

SERIES ESTABLISHED: Klickitat County, Washington, 2003.

REMARKS: Diagnostic horizons and features recognized in this pedon are:
Ochric epipedon - the zone from the mineral surface to 15 inches
Argillic horizon - the zone from 15 to 60 inches. The argillic horizon has less than 20 percent decrease from the maximum in clay at 60 inches.
Particle-size control section - the zone from 17 to 37 inches
Depth to diagnostic horizons and features are measured from the top of the first mineral layer.

National Cooperative Soil Survey
U.S.A.

Business Plan | Oak Hill Vineyard

A. Summary

- Business Name: Oak Hill Vineyard, LLC
- Founders: Dave Spitzer and Laurie Garber
- Business Location: 9+ acre parcel off Courtney Road on Burdoin Mountain, just east of White Salmon, Washington, in the burgeoning Columbia Gorge AVA wine region
- Business Type: 1.7 acre Vineyard for wine grapes
- Mission Statement: To be good stewards of the land, work hard, be creative, have fun, and grow high-quality wine grapes in a beautiful setting.

B. Business Description

Industry Overview

The Columbia Gorge wine region, known for its unique microclimates and rich volcanic soil, has gained recognition as an emerging wine-producing area. The region is experiencing a boom in high quality wine production. This presents an opportunity to establish a 1.7 acre vineyard.

Vision

Oak Hill Vineyard aims to earn a profit and contribute to the local wine industry by consistently providing premium wine grapes and eventually producing its own wine label.

Products and Services

- Cultivation of mid-ripening wine grape varieties in high demand (e.g., Syrah, Merlot, Viognier).
- Marketing and selling wine grapes to local wineries.
- Long-term plan: Establish a small-scale winery to produce and sell wine under our label.

Target Market

Our primary customers will be local wineries in the Columbia Gorge region looking for high-quality wine grapes. We will also explore opportunities to sell our grapes in the regional wine market.

Marketing and Sales Strategy

- Establish relationships with local wineries and participate in industry events.
- Join the local wine association for networking and marketing opportunities.
- Develop an online presence with a professional website showcasing our vineyard and grapes.

C. Operational Plan

Location

- Consult with expert to determine site suitability and ideal placement for vinifera wine grapes. **See Letter Report of Alan Busacca, Vinitas Consulting**. We will plant in 2 blocks: a 1.5 acre block on the SE corner of the property, and a .2 acre block on the SW corner. This maximizes use of our available open grassland for planting while preserving the existing oak woodland and conifer forest.
- Ensure accessibility for equipment and labor.
- Apply for necessary permits.

Infrastructure

- Build barn for equipment storage and maintenance, and to provide a central structure for off-grid utilities.
- Set up off-grid solar power and water systems.
- Improve access road to planting area.

Vineyard Setup

- Work with consultant to select grape varieties suitable for the region and microclimate.
- Layout vineyard, install trellising and drip irrigation systems and deer fencing
- Prepare the soil and plant vines.
- Implement sustainable farming practices.

Equipment and Labor

- Acquire necessary equipment (tractors, pruning tools, etc.).
- Hire skilled labor for vineyard planting and harvest.
- Develop owners' skills to handle most pruning and maintenance tasks.

Harvest and Post-Harvest

- Implement efficient harvesting methods.
- Store and package grapes appropriately for sale.
- Reserve a small portion of the harvest for developmental wine-making.

D. Financial Plan

10-year budget

We used the NW Wine Grape Cost of Production Calculator (nwgrapecalculators.org) to develop our budget and determine profitability. (See Summary attached.) Our 1.7 acre vineyard will be small enough

that we won't need to borrow any funds and can manage much of the labor ourselves, while also being large enough to produce a profitable volume of high quality fruit.

The Calculator provides industry average figures as default costs. We completed the calculator with appropriate inputs for our business where known, and otherwise used default values. For example, we have no need to borrow capital, won't need a wind machine, and won't need to pay outside labor for tractor work. Our consultant, Alan Busacca, projected an expected price per ton of $3,000 to $4,000, so we used $3,500 as a mid-range estimate. We projected yields to begin at 2 tons/acre in year 2 and increase to 4 tons/acre at year 4 in the calculator. (Because the calculator starts with a year zero, this is actually years 3 and 5 of the vineyard.)

The Calculator projects a profit by year 2 with annual income exceeding cash costs. By year 5, we'll have eliminated the carryover loss from our initial investment, as this snapshot from the Calculator's summary shows:

Summary per acre	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Net Returns above Total Costs	($3,425.63)	($15,332.78)	$3,642.52	$4,752.63	$9,277.70	$9,277.70
Carryover loss	0	0	($15,332.78)	($11,690.27)	($6,937.63)	$0.00
Accumulated Expenses	($3,425.63)	($15,332.78)	($11,690.27)	($6,937.63)	$2,340.07	$9,277.70
Net Returns above Cash costs	($3,365.38)	($14,312.87)	$3,954.79	$5,355.10	$9,870.30	$9,870.30
Times 1.7 acres	($5,721.15)	($24,331.87)	$6,723.14	$9,103.68	$16,779.50	$16,779.50

Capital expenditures

Our vineyard will require basic infrastructure, which will be funded by equity from Dave and Laurie. The infrastructure will be long-term assets carried on the business balance sheet, not the profit and loss.

- Solar arrays and battery storage: $25,000
- Barn: $75,000

Funding Requirements

Dave and Laurie are privileged to be in a position to self-fund this business venture. We own the land outright and have sufficient savings and investments to cover the start-up and operational costs. Therefore, we will not have to reserve any of the income to servicing debt.

E. Risk Analysis

Potential risks include extreme weather, pests and disease impacting the quality and quantity of the harvest. Risks also include the having difficulty finding a buyer for our grapes. Dave and Laurie recognize that they are new to this business and will mitigate these risks by approaching things with humility and a willingness to learn. We will take advantage of the significant resources available to small farmers through the WSU and OSU extension programs and the community of wine growers in the Columbia Gorge AVA. The marketing and sales portion of the business will rely on relationships that we will need to cultivate just as carefully as our vineyard. The three-year delay between initial planting and harvest will give us the time and on-the-ground experience to develop these relationships.

F. Long-Term Strategy

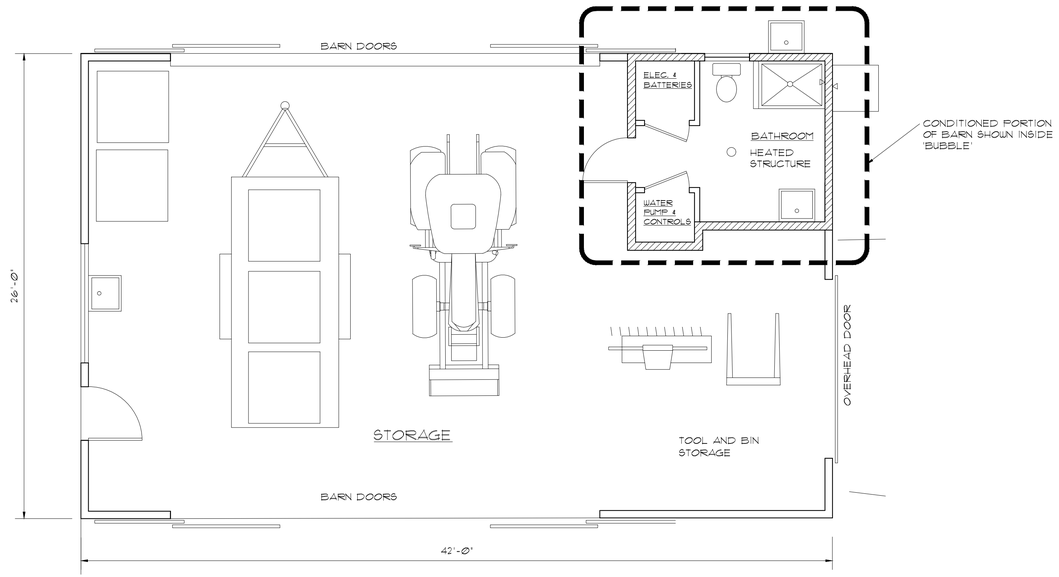
Our long-term goal is to produce our own wines through an off-site custom crush arrangement, allowing us to sell wines under our own label. Selling a finished product may allow for a higher return on investment. We will build up to this by experimenting with small batches for research and marketing purposes.

G. Conclusion

Oak Hill Vineyard seeks to become a successful boutique vineyard in the region, providing high-quality wine grapes and contributing to the thriving wine industry. This business plan outlines the roadmap for achieving these goals, and we are excited about the potential of our venture in the Columbia Gorge wine region.

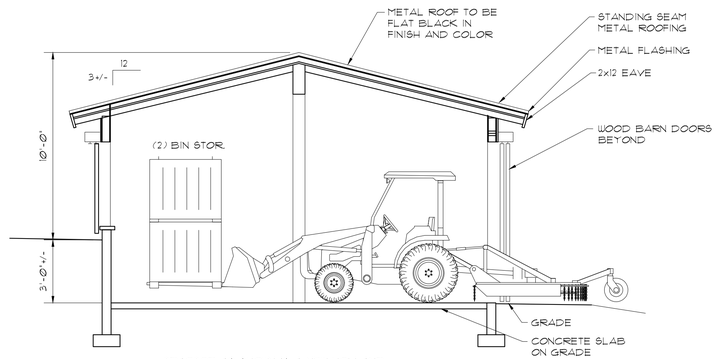
COSTS AND RETURNS PER ACRE

Period	0	1	2	3	4	5	6	7	8	9	10
Yield (tons/acre)	0.00	0.00	2.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Price ($/ton)	$0.00	$3,500.00	$3,500.00	$3,500.00	$3,500.00	$3,500.00	$3,500.00	$3,500.00	$3,500.00	$3,500.00	$3,500.00
REVENUE ($/acre):											
Grape Sales	$0.00	$0.00	$7,000.00	$10,500.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
Other Sales	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Revenue:	$0.00	$0.00	$7,000.00	$10,500.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
EXPENSES ($/acre):											
VARIABLE COSTS:											
Plant Removal and Site Prep	$ 1,102.70	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Grow Tubes	$ -	$ 544.80	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Nursery Stock	$ 1,702.50	$ 1,702.50	$ 102.15	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Irrigation Install, Equip Rental	$ 90.00	$ 4,538.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Trellis Material/Ties	$ -	$ 4,074.68	$ 47.92	$ 1,111.40	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Fertilizer	$ -	$ 150.00	$ 150.00	$ 150.00	$ 150.00	$ 150.00	$ 150.00	$ 150.00	$ 150.00	$ 150.00	$ 150.00
Organic Herbicide	$ -	$ -	$ -	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00
Chemicals	$ -	$ -	$ 90.00	$ 248.00	$ 248.00	$ 248.00	$ 248.00	$ 248.00	$ 248.00	$ 248.00	$ 248.00
Pruning (Custom pre-prune and hai	$ -	$ -	$ 287.00	$ 307.50	$ 336.00	$ 336.00	$ 336.00	$ 336.00	$ 336.00	$ 336.00	$ 336.00
Custom Harvesting/Hauling	$ -	$ -	$ 240.00	$ 360.00	$ 480.00	$ 480.00	$ 480.00	$ 480.00	$ 480.00	$ 480.00	$ 480.00
Canopy Management	$ -	$ -	$ 820.00	$ 1,045.50	$ 1,086.50	$ 1,086.50	$ 1,086.50	$ 1,086.50	$ 1,086.50	$ 1,086.50	$ 1,086.50
Labor	$ 75.85	$ 1,949.96	$ 436.65	$ 436.65	$ 302.38	$ 302.38	$ 302.38	$ 302.38	$ 302.38	$ 302.38	$ 302.38
Irrigation Electrical/Repairs/Water	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ 250.00	$ 250.00	$ 250.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00
Equipment Fuel/Lube & Repair	$ 24.33	$ 707.93	$ 226.49	$ 490.85	$ 481.83	$ 481.83	$ 481.83	$ 481.83	$ 481.83	$ 481.83	$ 481.83
Interest on Op. Cap.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Variable Cost:	$3,245.38	$13,917.87	$2,650.21	$4,749.90	$3,684.70	$3,684.70	$3,684.70	$3,684.70	$3,684.70	$3,684.70	$3,684.70
FIXED COSTS:											
Interest- Loan	$ -	$ -	$ -	$ -	$ -	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Management Fee	$ -	$ 275.00	$ 275.00	$275.00	$ 275.00	$275.00	$275.00	$275.00	$275.00	$275.00	$275.00
Property Insurance	$ 60.00	$ 60.00	$ 60.00	$60.00	$ 60.00	$60.00	$60.00	$60.00	$60.00	$60.00	$60.00
RE Tax	$ 60.00	$ 60.00	$ 60.00	$60.00	$ 110.00	$110.00	$110.00	$110.00	$110.00	$110.00	$110.00
Other	$ -	$ -	$ -	$0.00	$ -	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Depreciation	$ 11.15	$ 394.57	$ 115.79	$ 266.57	$ 262.43	$262.43	$262.43	$262.43	$262.43	$262.43	$262.43
Machinery Ownership Cost	$ 15.44	$ 482.22	$ 95.30	$ 288.27	$ 282.53	$282.53	$282.53	$282.53	$282.53	$282.53	$282.53
Interest- Opportunity Cost	$ 33.65	$ 143.13	$ 101.18	$ 47.63	$ 47.63	$47.63	$47.63	$47.63	$47.63	$47.63	$47.63
Total Fixed Cost:	$180.24	$1,414.92	$707.27	$997.47	$1,037.59	$1,037.59	$1,037.59	$1,037.59	$1,037.59	$1,037.59	$1,037.59
Total Cost:	$3,425.63	$15,332.78	$3,357.48	$5,747.37	$4,722.30	$4,722.30	$4,722.30	$4,722.30	$4,722.30	$4,722.30	$4,722.30
Summary per acre	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Net Returns above Total Costs	($3,425.63)	($15,332.78)	$3,642.52	$4,752.63	$9,277.70	$9,277.70	$9,277.70	$9,277.70	$9,277.70	$9,277.70	$9,277.70
Carryover loss	0	0	($15,332.78)	($11,690.27)	($6,937.63)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Accumulated Expenses	($3,425.63)	($15,332.78)	($11,690.27)	($6,937.63)	$2,340.07	$9,277.70	$9,277.70	$9,277.70	$9,277.70	$9,277.70	$9,277.70
Net Returns above Cash costs	($3,365.38)	($14,312.87)	$3,954.79	$5,355.10	$9,870.30	$9,870.30	$9,870.30	$9,870.30	$9,870.30	$9,870.30	$9,870.30
Times 1.7 acres	($5,721.15)	($24,331.87)	$6,723.14	$9,103.68	$16,779.50	$16,779.50	$16,779.50	$16,779.50	$16,779.50	$16,779.50	$16,779.50



1 / A1 FLOOR PLAN OF BARN

1/4" = 1'-0"



TRACTOR AS SHOWN IS A NEW HOLLAND WORKMASTER 35 HP W/ BUCKET/FORKLIFT AND MOWER - WHICH IS ALL CURRENTLY ON SITE EXPOSED TO THE WEATHER

2 / A1 CROSS SECTION

1/4" = 1'-0"

REGISTERED ARCHITECT · STATE OF OREGON
DAVID M. SPITZ
PORTLAND, OREGON

DMS ARCHITECTS
2325 NE 19TH AVE.
PORTLAND, OR 97212
OFFICE 503 335 9040
FAX 503 335 5850
DAVE@DMSARCHITECTS.COM

COURTNEY ROAD

WHITE SALMON, WASHINGTON

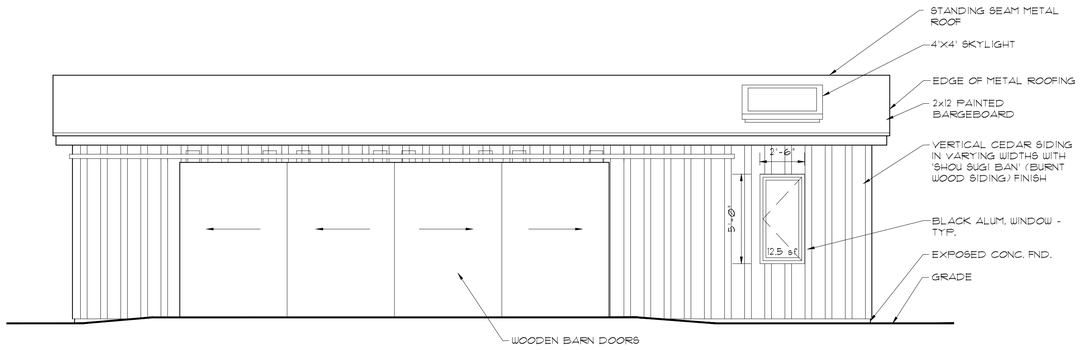
SHEET CONTENT
FLOOR PLAN
CROSS SECTION

DRAWN
DMS

DATE 9-22-25

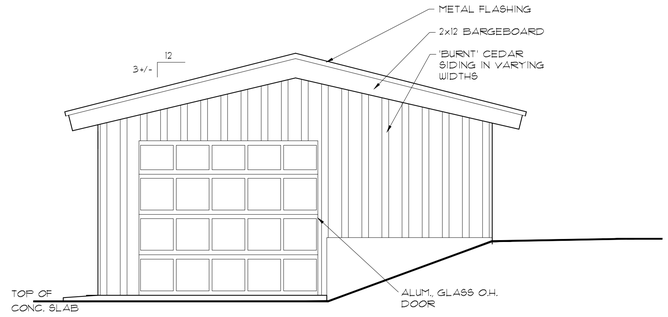
REVISIONS

SHEET
A1 OF 2



1 A2 EAST ELEVATION

1/4" = 1'-0"

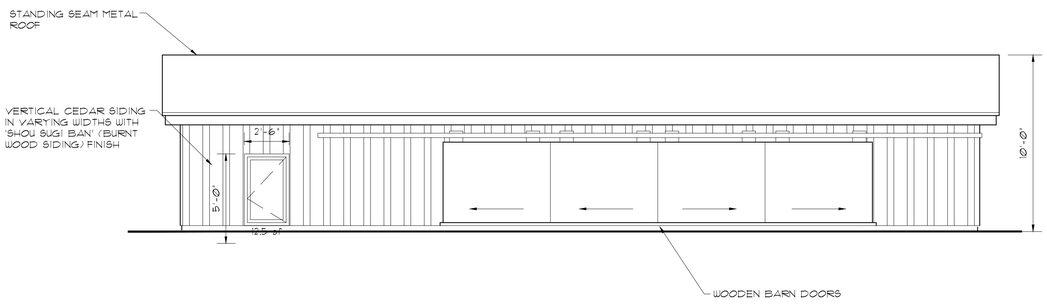


2 A2 NORTH ELEVATION

1/4" = 1'-0"

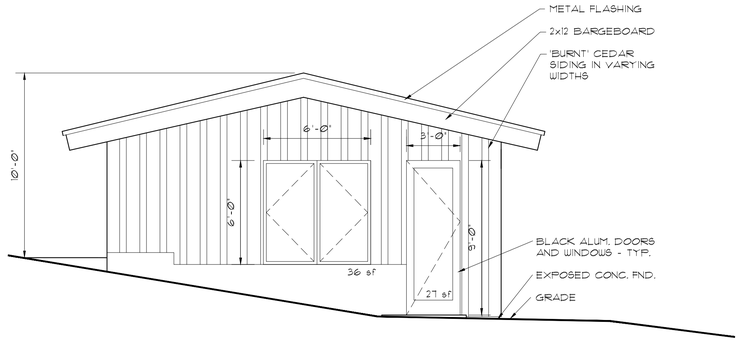
EXTERIOR FINISH MATERIALS:

SIDING:	VARYING WIDTHS OF CEDAR (3'-8") - 'BURNT' (SHOU SUGI BAN) FINISH - FROM PIONEER MILLWORKS - MCMINNVILLE OREGON - LARCH CINDER OR SIMILAR FINISH
ROOFING:	STANDING SEAM METAL ROOF - FLAT BLACK WITH NON-REFLECTIVE GLAZE - FROM METALLION INDUSTRIES - ESTACADA, OREGON
METAL FLASHINGS:	SAME COLOR/FINISH AS METAL ROOFING
BARN DOORS:	EXPOSED WOOD - COAST SEQUOIA INC. - KNOTTY WOOD BARN DOOR - SMOKY GRAY FINISH
OVERHEAD DOOR:	ALUMINUM - BLACK FRAME W/ GLAZING FROM THE OVERHEAD DOOR CO. - PORTLAND, OR
DOORS AND WINDOWS:	BLACK ALUMINUM WITH NON-REFLECTIVE GLAZING FROM MARVIN WINDOWS AND DOORS



3 A2 WEST ELEVATION

1/4" = 1'-0"



4 A2 SOUTH ELEVATION

1/4" = 1'-0"

REGISTERED ARCHITECT
DAVID M. SPITZER
PORTLAND, OREGON
STATE OF OREGON

DMS ARCHITECTS
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FAX 503 335 5850
DAVE@DMSARCHITECTS.COM

COURTNEY ROAD

WHITE SALMON, WASHINGTON

SHEET CONTENT
EXTERIOR ELEVATIONS

DRAWN DMS
CHECKED

DATE 9-22-25

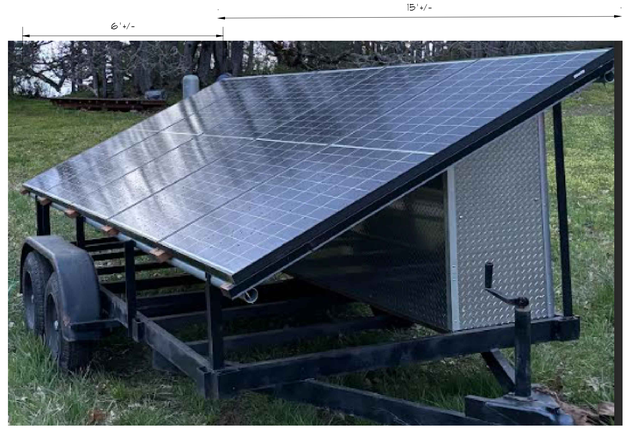
REVISIONS

SHEET A2 OF 2

THESE IMAGES OF BARNS WERE CHOSEN FOR SCALE, BLACK METAL ROOFING, BLACK EAVES, DARK SIDING, LARGE DOORS

SIM. SIDING, TRIM, O.H. DOOR OPNG.

BARN IMAGERY



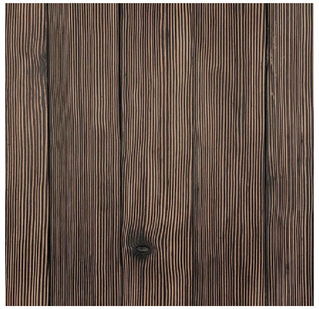
SOLAR ARRAYS WILL BE TWO TOTAL - ONE AS SHOWN EXCEPT WITH WHEELS REMOVED AND SET ON BLOCKS - AND ONE MADE OF WOOD OF SIMILAR SIZE/SHAPE TO SIT ON GROUND NEXT TO THIS ONE.

SOLAR ARRAYS

DARK WINDOWS/SIDING

FLAT BLACK METAL ROOFING

ALUM/GLASS OVERHEAD DOOR



SHOU SUGI BAN WOOD SIDING

WOOD BARN DOORS

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COURTNEY ROAD

WHITE SALMON, WASHINGTON

SHEET CONTENT
IMAGERY

DRAWN DMS
CHECKED
DATE 6-4-25
REVISIONS

SHEET A3 OF 3

TECHNICAL MEMORANDUM

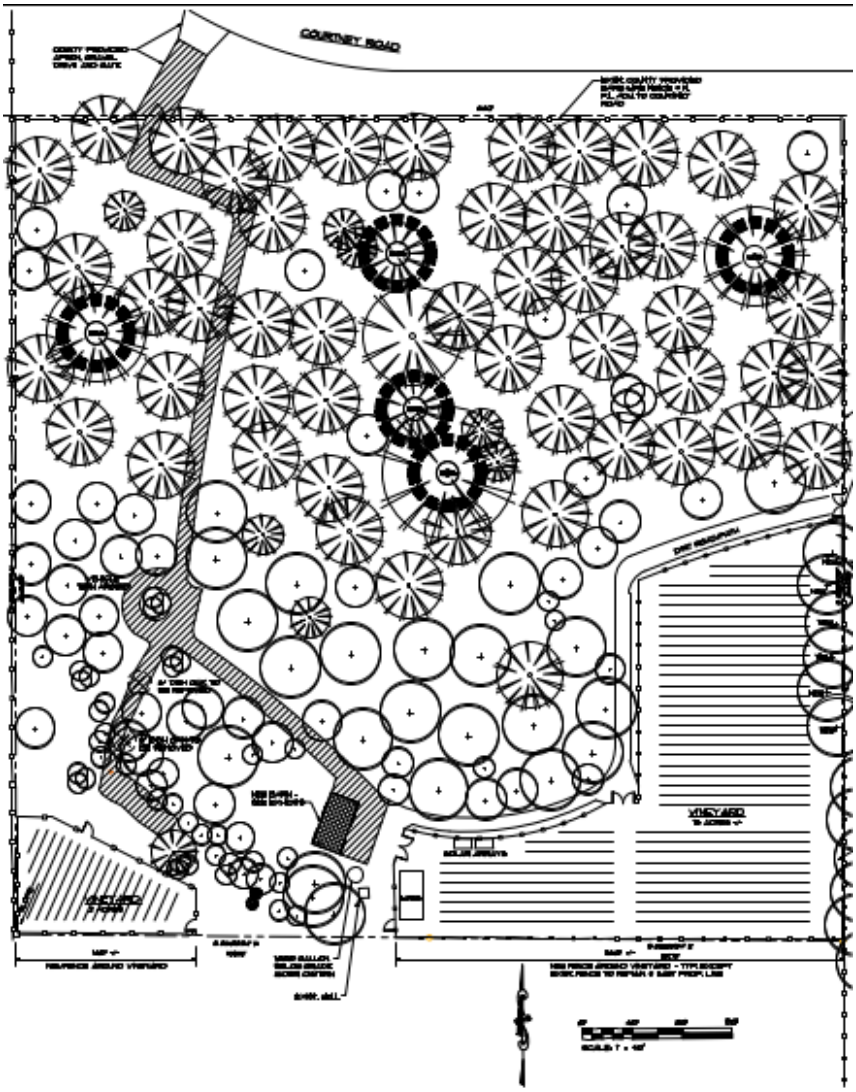
BELL DESIGN CO.
Civil Engineering & Land Surveying

TO: Laurie Garber & Dave Spitzer
2325 NE 19th Ave., Portland, OR 97212
Phone: (503) 522-8927

FROM: Austin R. Bell, PLS
Bell Design Company
900 W. Steuben Street, Box 308
Bingen, WA 98605
Phone: (509) 493-3886

SUBJECT: View Analysis in Columbia River Gorge National Scenic Area

DATE: September 5, 2025



TECHNICAL MEMORANDUM

BELL DESIGN CO.
Civil Engineering & Land Surveying

INTRODUCTION

The property owner(s) of Parcel number 03112800002800 in Section 28, Township 3 North, Range 11 East of the Willamette Meridian in Klickitat County and accessed from Courtney Road are proposing property improvements that include a proposed structure within the CRG National Scenic Area.

A viewshed analysis was performed to accurately see the impacts to views within the NSA.

A viewshed analysis is a Geographic Information System (GIS) method that determines the visible or invisible areas from one or more observer locations, accounting for terrain and other obstructions. Also known as line-of-sight analysis or intervisibility analysis, it uses a Digital Elevation Model (DEM) and an observer point to calculate the visible extent. The output shows areas visible or hidden from the observer.

FINDINGS

Bell Design Company did a viewshed analysis using LIDAR data from the Washington LIDAR Portal provided through the Washington State Department of Natural Resources. The LIDAR data was used to create the View Simulation in the software Global Mapper.

Purple shading was selected to show the terrain that is visible to an observer from the elevation at the top of the proposed structure. Alternatively an observer located within the purple region would be able to see the top of the structure if all vegetation were absent.

CONCLUSIONS

The results of the viewshed show that the proposed structure is not visible from Highway 14, the Columbia River and Interstate 84, which are identified as Key Viewing Areas.

The proposed structure is viewable from the Historic Columbia River Highway State Trail in multiple locations between the Mark O. Hatfield Trailhead, east of the city of Hood River OR, and the city of Mosier, OR.

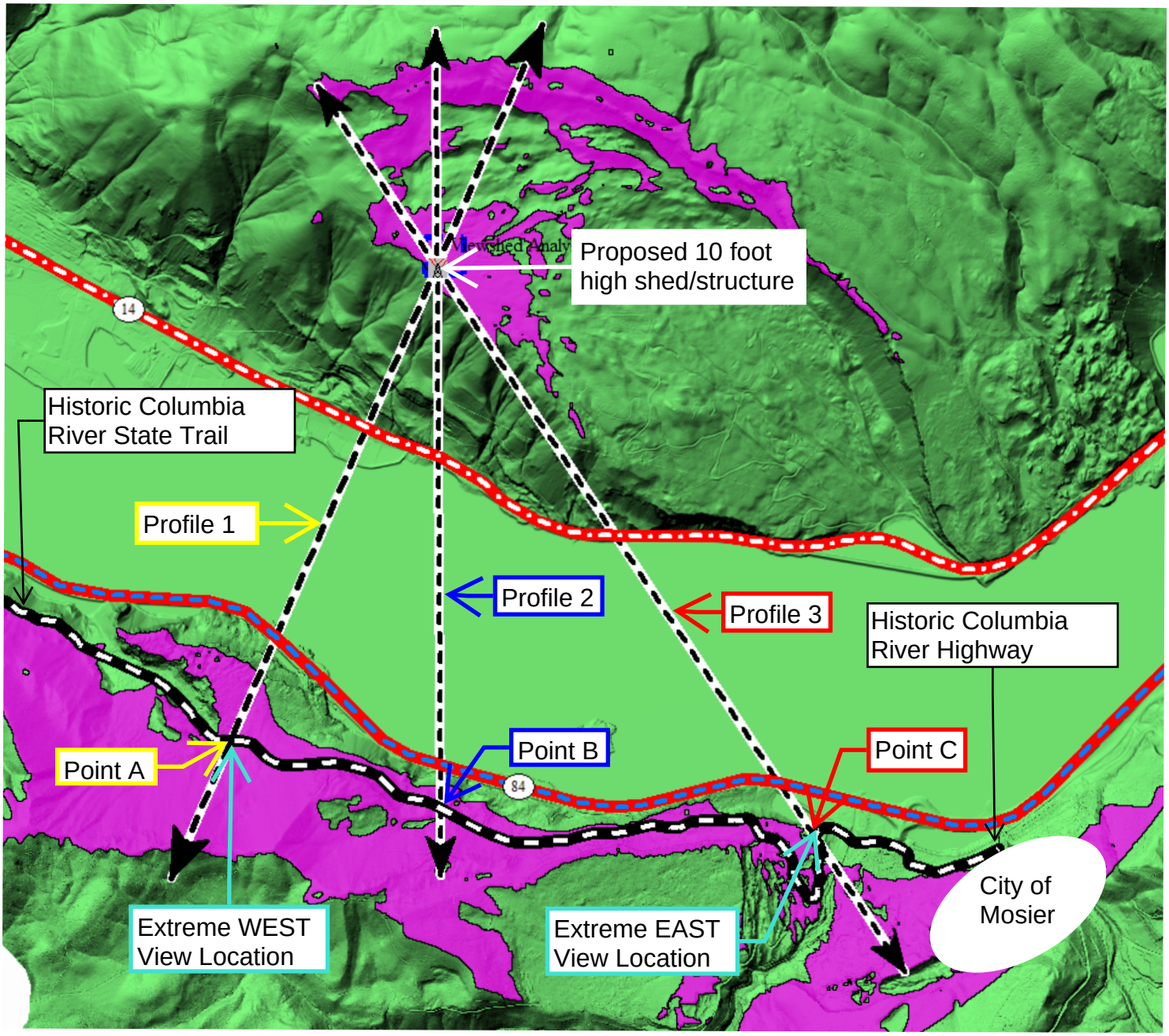
A key aspect of consideration is that the proposed structure does not break the skyline from any viewing position along the Historic Columbia River Highway State Trail as there is higher terrain to the north of the property. See profiles views that follow.

The proposed structure and improvements will make use of existing or planted vegetation that will seek to make the structure Visually Subordinate.

Key view area visual assessment with sight lines and elevation profiles between the proposed shed/structure and three locations along historic Columbia river highway, a key viewing area.

purple shading shows land surface that is viewable from the location of the proposed shed ten feet above existing ground. The inverse is that all purple areas can see the top of the ten foot high shed structure if all vegetation were removed.

Note: LIDAR data obtained through the Washington LIDAR Portal from the Washington State Department of Natural Resources.

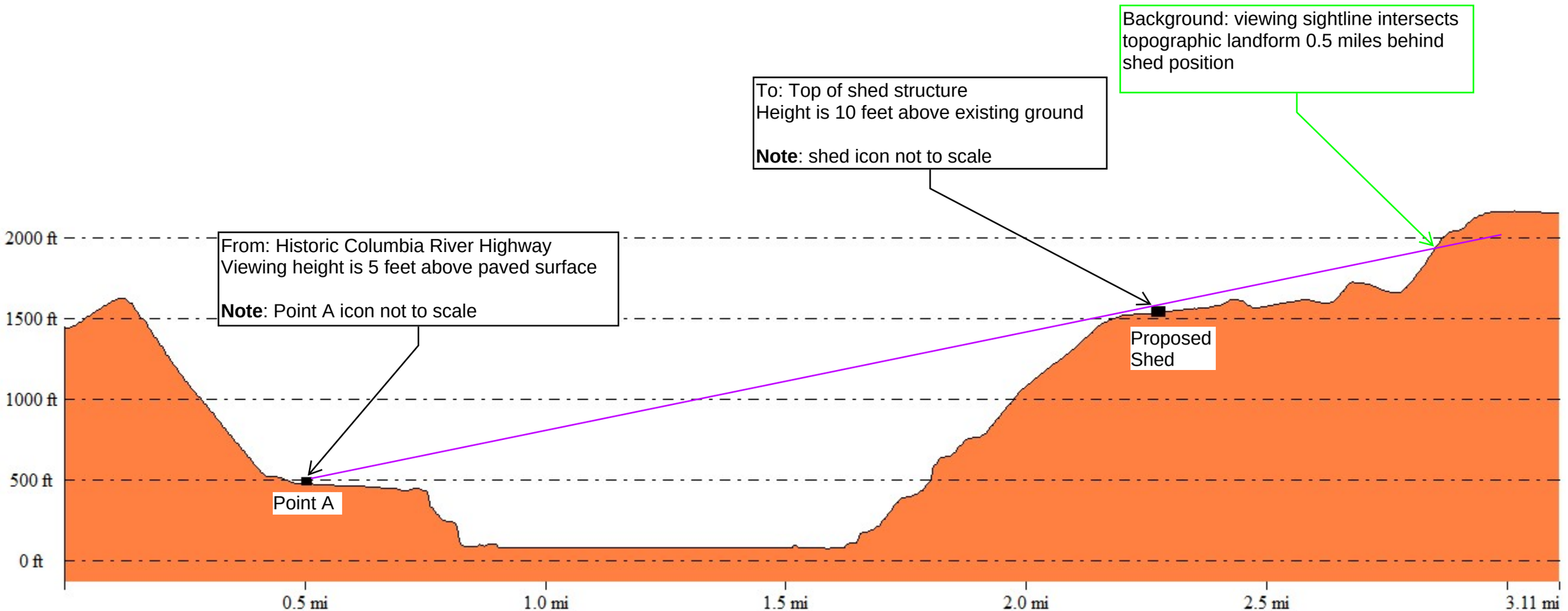


Owners: David Spitzer, Laurie Garber
Property Address: 314 Courtney Road, WS, WA
Parcel Num: 03112800002800
Legal: NWSWSE Less RW; Section 28-T3N-R11E

BDC/Job_25B229

BELL DESIGN CO.

Profile 1



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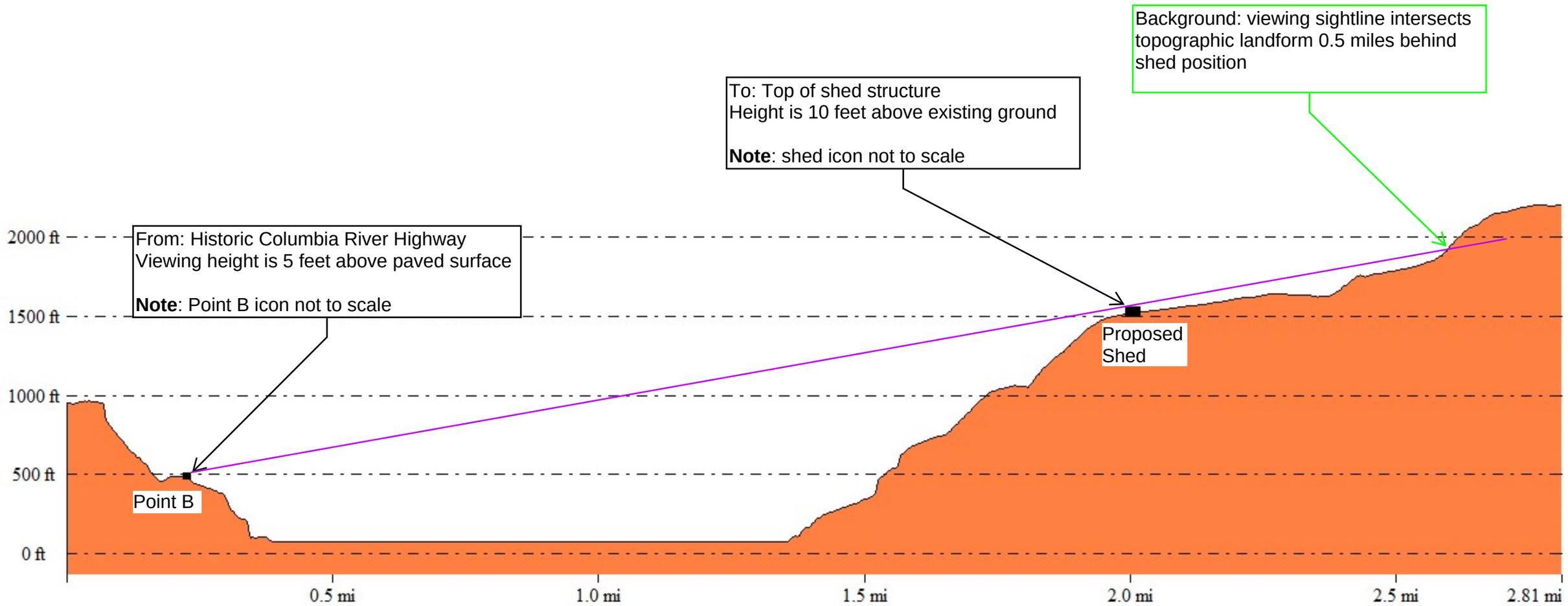
BELL DESIGN CO.

BDC/Job_25B229

Profile 2

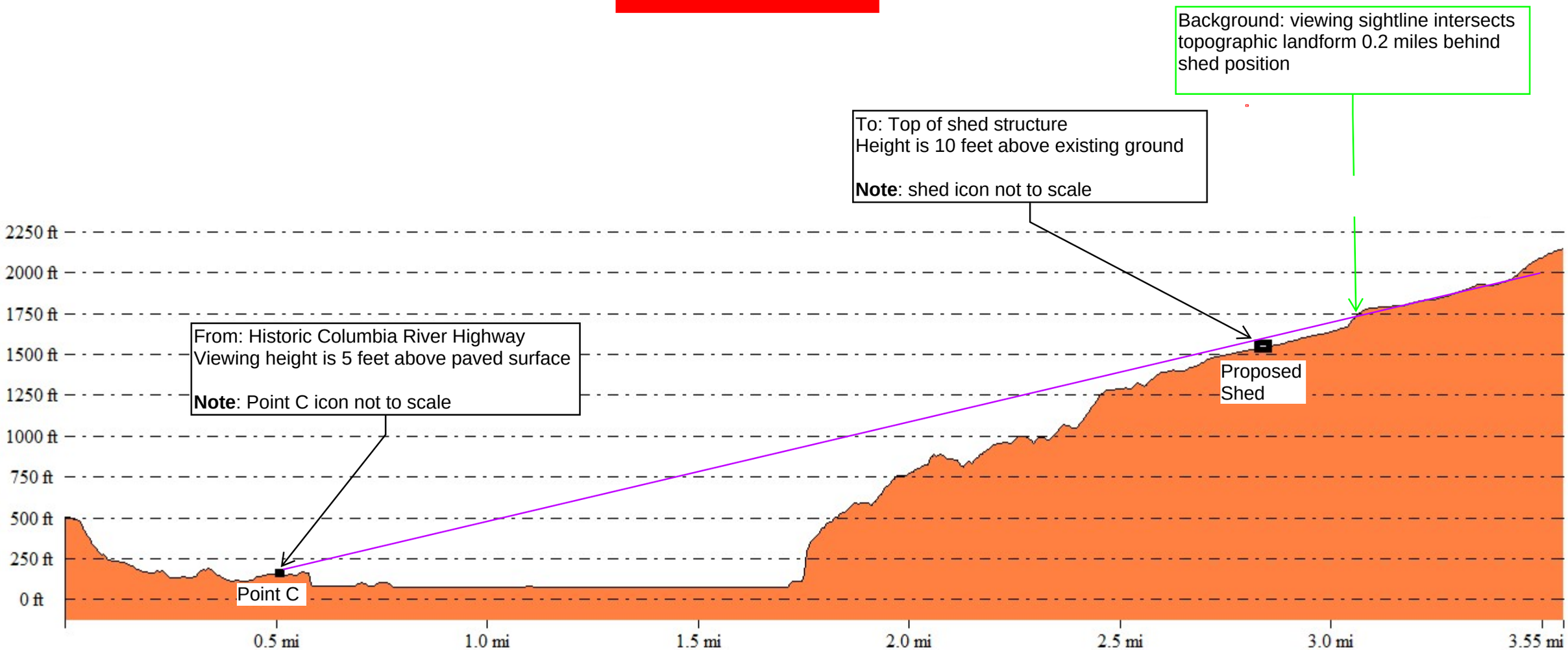


Owners: David Spitzer, Laurie Garber
Property Address: 314 Courtney Road, WS, WA
Parcel Num: 03112800002800
Legal: NWSWSE Less RW; Section 28-T3N-R11E

BELL DESIGN CO.

BDC/Job_25B229

Profile 3



Owners: David Spitzer, Laurie Garber
Property Address: 314 Courtney Road, WS, WA
Parcel Num: 03112800002800
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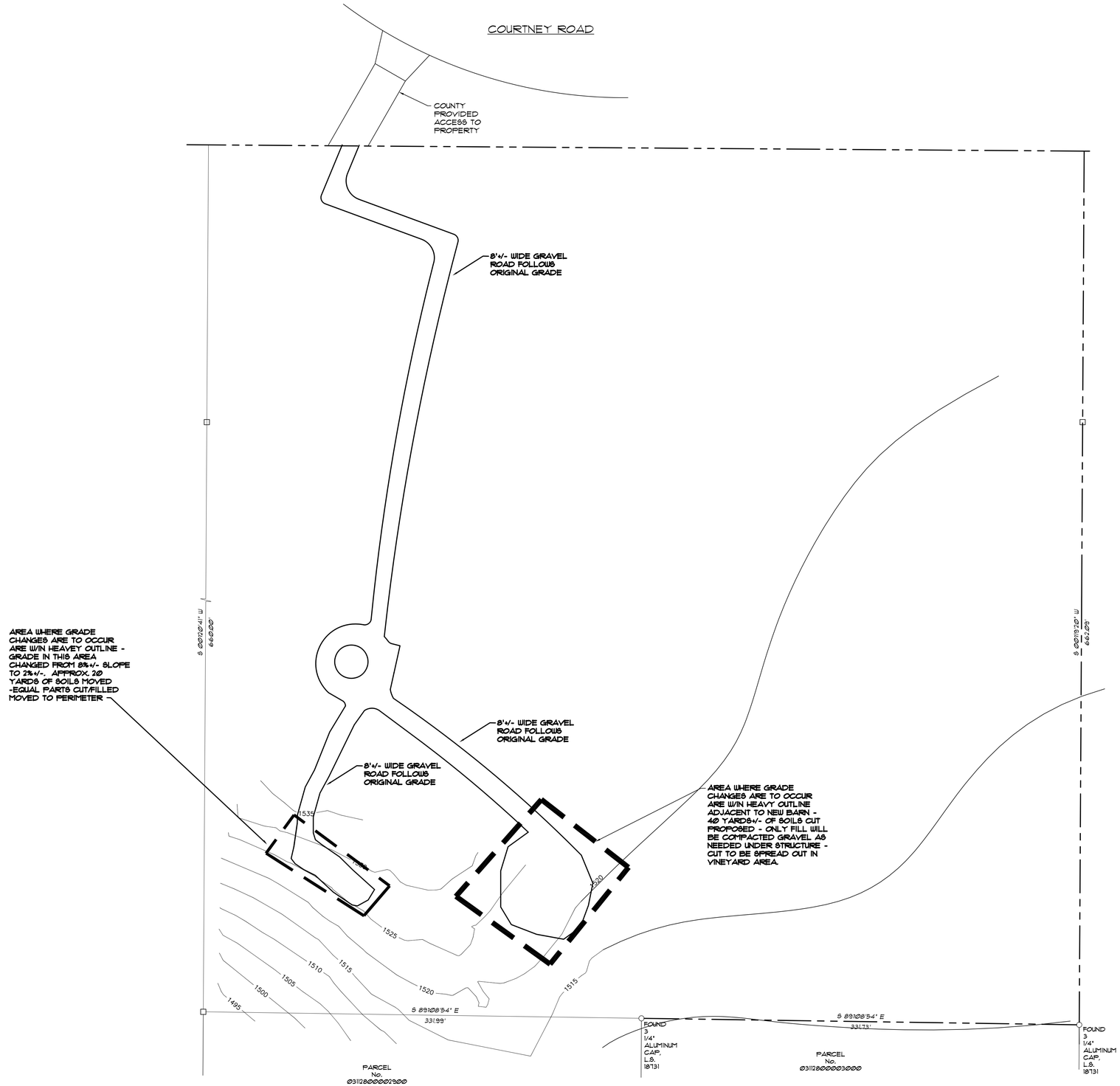
BELL DESIGN CO.

BDC/Job_25B229



1 / T1 TOPOGRAPHY AND GRADING PLAN

1/16" = 1'-0"

REGISTERED ARCHITECT
DAVID M. SPILZER
EXPIRES: 6/30/26
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@DMSARCHITECTS.COM
DAVE@DMSARCHITECTS.COM

COURTNEY ROAD

WHITE SALMON, WASHINGTON

SHEET CONTENT
TOPO AND GRADING PLAN

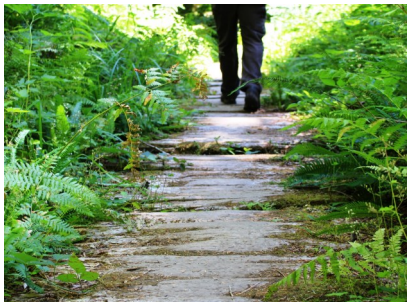
DATE 12-9-25

REVISIONS

SHEET T1 OF 1

HABITAT ASSESSMENT AND OAK MITIGATION PLAN

September 29, 2025



Courtney Road
Klickitat County, Washington

Prepared for

Jordan Ramis, PC
1211 SW Fifth Avenue, Suite 2700
Portland, OR 97204
(503) 598-5557

Prepared by
Ecological Land Services
1157 3rd Avenue, Suite 220A • Longview, WA 98632
(360) 578-1371 • Project Number 3128.02

SIGNATURE PAGE

The information and data in this report was compiled and prepared under the supervision and direction of the undersigned.

Julianne Blake
Biologist IV

TABLE OF CONTENTS

TABLES (IN TEXT)

FIGURES AND PHOTOPLATES

APPENDICES

INTRODUCTION

Ecological Land Services, Inc. (ELS) was contracted by the applicant, Jordan Ramis, PC, to address impacts to Oregon white oak (*Quercus garryana*; oak) trees associated with the construction of a vineyard and associated infrastructure on Klickitat County parcel number 03112800002800, within a portion of Section 28, Township 3 North, Range 10 East of the Willamette Meridian, near Bingen, Washington (Figure 1). One portion of the road as well as a flat landing area for an approved forest practice (CD-23-01-S) have already been constructed on the approximately 9.42-acre parcel. This habitat assessment and oak mitigation plan has been prepared in accordance with Columbia River National Scenic Area (NSA) guidelines and *Management recommendations for Washington's priority habitats: Best management practices for mitigating impacts to Oregon white oak priority habitat* (Guidance; Nolan and Azerrad 2024).

RESPONSIBLE PARTIES

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Julianne Blake, Biologist
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PROJECT DESCRIPTION

PROJECT HISTORY

The property is located within the Columbia River Gorge National Scenic Area (NSA) and was purchased in 2022 by David Spitzer and Laurie Garber. The property is also located within a protected habitat area for western gray squirrels (*Sciurus griseus*, WGS). The landowners consulted with the NSA planner, Bryan Guske, regarding allowed uses and determined the parcel shall be used for agricultural purposes. Prior to permit approval, an access road had been constructed which resulted in the removal of two oak trees (Figure 2). Unpermitted activities resulted in a violation, which was later agreed to be resolved by acquiring after-the-fact approvals. On February 27, 2023, Skookum Resource Management (SRM) submitted a Forest Practices Consistency Determination (FPCD) to the U.S. Forest Service (USFS) on behalf of the landowners. SRM completed the *Spitzer Forest Stewardship Plan* (SRM 2023) to accompany the Forest Practices application, which was prepared to enhance onsite oak woodland habitat for fire resistance and improved wildlife conditions. The treatment map prepared by SRM is in Appendix A. The USFS approved the Forest Practice in September 2024.

The landowners submitted a land use application requesting approval for the establishment of a vineyard and associated infrastructure, which was denied by the Columbia River Gorge Commission (CRGC) in December 2024 due to not meeting review use standards. A settlement agreement was reached between the landowners, the CRGC, and Friends of the Columbia Gorge, in July 2025 which required a wildlife survey and mitigation plan be prepared in accordance with CRGC rules. The agreement further specified the mitigation plan shall propose planting six new oak trees onsite and be consistent with Washington Department of Fish and Wildlife (WDFW) Guidance (WDFW 2024). This Habitat Assessment and Oak Mitigation Plan has been prepared to satisfy this requirement by summarizing the results of the site assessment and detailing mitigation requirements for project impacts.

PROPOSED DEVELOPMENT

The project will include the construction of an interior access road, barn for storage of agricultural equipment, solar arrays, garden, and approximately 1.70 acres of vineyard. The project will also remove competing conifer trees and thin the lower portions of the remaining conifers to reduce fuel loading, release oak canopy from competition, and improve WGS habitat as part of the approved forest practice (Figures 3 and 4). A gravel road that provides site access has already been constructed in the northeastern corner of the site and continues southerly to a landing to be used for the Forest Practice. A new road will diverge from the existing road to provide access to the barn near the southern boundary and around the northeastern boundary of the larger of the two segments of the vineyard (Figure 4).

The project has resulted in the removal of two Oregon white oak trees, for a total canopy impact of approximately 0.02 acres (670 sq. ft.). To offset physical impacts from oak removal, approximately 0.03 acres (1,340 sq. ft.) of new oak woodland will be established along the eastern site boundary. To offset temporal impacts from oak removal, approximately 0.02 acres (670 sq. ft.) of existing oak habitat will be enhanced (Figure 5). The entire forested canopy area

onsite will be enhanced through the approved forest practice, satisfying this requirement. The mitigation area will be monitored for five years to ensure success of installed species.

METHODOLOGY

The site was evaluated for the presence of wetlands using the Routine Determination Method according to the U.S. Army Corps of Engineers' 1987 Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers' Wetland Delineation Manual (Environmental Laboratory 1987); Arid West Region (Version 2.0) (Corps 2008). The Routine Determination Method and defining wetland criteria are discussed further in Appendix B. Wetlands are regulated as "Waters of the United States" by the U.S. Army Corps of Engineers (Corps) and as "Waters of the State" by the Washington Department of Ecology (Ecology), and locally by Klickitat County. The site was evaluated for the presence of oak woodlands and quality of habitat using the WDFW Guidance document (Nolan and Azerrad 2024), and the presence of other priority habitats was evaluated according to definitions provided by WDFW's *Priority Habitats and Species List* (PHS; WDFW 2008). Oaks are considered a priority habitat by WDFW and habitats within the National Scenic Area are regulated by the USFS and CRGC.

ELS biologists conducted a reconnaissance of the site on August 10, 2025 to document current conditions, including mapping and identification of oak woodlands and WGS nests. Prior to conducting the site visit, ELS biologists reviewed current and historic aerial imagery dating back to 1990 and reviewed online environmental database information regarding soils, topography, wetlands, and habitat conservation areas. No test plots were taken as no evidence of wetland areas exist onsite. Oak driplines were mapped using a combination of aerial imagery and a hand-held GPS unit capable of submeter accuracy. Oak and conifer locations were identified using a combination of aerial imagery, data provided by the landowners, and a handheld GPS unit. Squirrel nest locations were identified using point locations provided by the PHS online map and SRM, and ELS visually confirmed WGS nests onsite.

EXISTING CONDITIONS

EXISTING AND SURROUNDING LAND USES

The approximately 9.42-acre site is located off Courtney Road, approximately three miles north of Highway 14, within the Columbia River Gorge National Scenic Area and the Burdoin Mountain Special Management Area (SMA) and is zoned SMA Agriculture. The majority of the site consists of a mixed coniferous-deciduous forested canopy with a multi-layered subcanopy, while the southeast and southwest sections of the site consist of grassland with weedy herbs and forbs and scattered shrubs. A gravel road in the western portion provides access from Courtney Road and continues southerly where it terminates at a landing that supports the forest practice. A mowed dirt road continues southwesterly from the gravel driveway and continues northwesterly, following the southern forested boundary. Another mowed dirt road runs east-west in the southern portion of the site. A fire break is located just south of the site and was created to prevent spread of the Burdoin Mountain Fire that occurred in the weeks prior to the site visit. A well is located in the south-central portion of the site. The majority of the site consists of an oak

woodland and five western gray squirrel nest are located in coniferous trees in the northern portion.

VEGETATION

The majority of the site is forested, while the southwest and southeast portions are open grasslands. The plant indicator status following the plant scientific name is defined by the *National Wetland Plant List Indicator Rating Definitions* (Corps 2012) and is in Appendix B.

FORESTED AREAS

Dominant vegetation found in forested areas includes **trees:** Oregon white oak, Douglas fir (*Pseudotsuga menziesii*, FACU), and Ponderosa pine (*Pinus ponderosa*, FACU); **shrubs:** poison oak (*Toxicodendron pubescens*, UPL), snowberry (*Symphoricarpos albus*, FACU), beaked hazelnut (*Corylus cornuta*, FACU), oceanspray (*Holodiscus discolor*, FACU), and black cap raspberry (*Rubus occidentalis*, UPL); and **herbs:** trailing blackberry (*Rubus ursinus*, FACU), crane's bill species (*Geranium* sp., assumed FACU), fescue grass species (*Festuca* sp., assumed FAC), brackenfern (*Pteridium aquilinum*, FACU), swordfern (*Polystichum munitum*, FACU), bedstraw species (*Galium* sp., assumed FAC), wild cucumber (*Cucumis anguria*, UPL), prickly lettuce (*Lactuca serriola*, FACU), and Canada thistle (*Cirsium arvense*, FACU). Canada thistle is the only confirmed invasive species located in forested areas. Further identification of the observed *Geranium* species is required to determine whether its features are consistent with Class B weed herb Robert (*Geranium robertianum*, FACU; Klickitat County 2025).

GRASSLANDS

Dominant vegetation found in open grassland areas includes **shrubs:** rose species (*Rosa* sp., assumed FAC) and dogbane (*Apocynum cannabinum*, FAC); **herbs:** knapweed (*Centaurea jacea*, FACU), plantain species (*Plantago* sp., assumed FAC), yarrow (*Achillea millefolium*, FACU), yellow star thistle (*Centaurea solstitialis*, UPL), and pasture grasses such as fescue grass, bentgrass species (*Agrostis* sp., assumed FAC), and ryegrass species (*Lolium* sp., assumed FAC). Knapweed and yellow star thistle are the only confirmed invasive species located in the open grassland areas.

SOILS

Soils onsite are mapped as Dalig loam, 5 to 30 percent slopes (798) and Rock outcrop-Rubble land-Haploxerolls complex, 30 to 90 percent slopes (721) as referenced on the Natural Resources Conservation Service website (NRCS 2025a; Figure 6). Dalig loam is classified as well drained with an average depth to water table of more than 80 inches and is not listed as hydric[1] (NRCS 2025b). Dalig loam is formed from colluvium and residuum derived from basalt mixed with loess and is typically found on hillslopes. A typical soil profile consists of loam from zero to five inches below ground surface (BGS) and clay loam from five to sixty inches BGS.

[1]Areas mapped as hydric soils do not necessarily mean that an area is or is not a wetland—hydrology, hydrophytic vegetation, and hydric soils must all be present to classify an area as a wetland.

All components of Rock outcrop-Rubble land-Haploxerolls complex are formed from colluvium and residuum derived from basalt mixed with loess, typically found on escarpments, and not considered hydric (NRCS 2025b). The rock outcrop component of Rock outcrop-Rubble land-Haploxerolls complex is composed of unweathered bedrock and the rubble land component is composed of fragmental material. A typical soil profile of the Haploxerolls component consists of gravelly sandy loam from zero to thirteen inches BGS and very cobbly silt loam from thirteen to sixty inches BGS.

Hydrology

According to Ecology's Water Quality Atlas, the site is in the Rowena Creek – Columbia River 12-digit hydrologic unit code (HUC) 170701051105 and Watershed Resource Inventory Area 29 Wind – White Salmon. Topography onsite slopes generally south-southeast down toward the Columbia River, with the northern portion of the site consisting of mild to moderate slopes that transition to very steep slopes just south of the southern site boundary. Surface runoff generated from precipitation follows topography, flowing generally south toward the Columbia River. No wetland hydrology was observed onsite.

Critical Areas Assessment

Fish and Wildlife Habitat Conservation Areas

Oregon White Oak

The Washington Department of Fish and Wildlife (WDFW) identifies which oak communities are considered priority habitats through its Priority Habitats and Species (PHS) program. The Washington Natural Heritage Program (WNHP) defines a North Pacific Oak Woodland as a community dominated or co-dominated by oak and associated with dry, low-elevation sites or those with frequent fires pre-settlement. An oak woodland is defined by PHS as a stand of oak or oak/conifer associations where the oak component of the canopy is at least 25 percent. East of the Cascade Mountains, priority oak habitat consists of stands greater than five acres in size (WDFW 2008). Oregon white oak woodlands are associated with eight different plant communities, including a wide variety of native herbaceous and shrub species. Oak woodlands provide a mix of feeding, nesting, and breeding habitat for many wildlife species (Nolan and Azerrad 2024). In urban areas, individual oak trees can be considered a priority habitat if they provide considerable value to wildlife. In addition to woodland communities, oaks are also associated with prairies and savannas in Washington. These communities are considered wooded grasslands and are an association of upland grassland and meadows (Rocchio and Crawford 2015). A large oak woodland (approximately 3.43 acres) is located onsite and continues offsite to the northwest, west, south, and east.

Western Gray Squirrel

Western gray squirrel habitat is typically in transitional, conifer-dominated areas that converge with open patches of oaks and other deciduous trees. According to the *Management. Recommendations for Washington's Priority Species: Western Gray Squirrel* (Linders et. A. 2010), the following habitat features support WGS populations:

- Pine, oak, and hazelnut trees provide food and nesting opportunities for WGS and larger trees are especially important due to their ability to produce an abundance of large seeds.
- Habitat patches range in size from individual trees to large, forested stands. Individual trees provide secluded den sites for rearing young and forested stands provide a long-term supply of food, cover, and nesting opportunities.
- The Klickitat WGS population favors conifer-dominated stands over mixed oak-conifer and pure oak stands. Large pine trees are most frequently used for nesting, foraging, and cover, and adjacent oaks are primarily a food source for this population.

The western gray squirrel has been identified onsite with five nest locations identified by SRM and PHS, and further visually confirmed by ELS biologists. All five nests are located in large conifer trees, and none were identified in oaks.

Critical Areas Inventories

State and Federally Listed Species and Critical Habitat

The potential presence of critical habitat, federally listed or state-listed species, and state sensitive species, including mammals, birds, reptiles, insects, and plants, that have a primary association with the habitat within or adjacent to the study area, was evaluated through a site visit, aerial images, and the following databases:

- National Wetlands Inventory (NWI; USFWS 2025a; Figure 6),
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS; WDFW 2025a; Figure 7), and
- U.S. Fish and Wildlife Service Information for Planning and Consultation (IPAC; USFWS 2025b, Appendix C).

Information on the current ESA listings and critical habitat designations are summarized in Table 1. Critical area inventory maps are typically used to gather general information about a region and due to the large scale necessary for regional mapping, are limited in accuracy for localized analyses. These maps should generally be used with discretion because they indicate potential conditions and must be confirmed by field observations.

USFWS National Wetlands Inventory

The NWI does not identify any wetlands onsite (Figure 6). ELS agrees with the NWI as no wetlands or wetland indicators were observed during the site visit.

Washington Department of Fish and Wildlife, Priority Habitats and Species

The Washington Department of Fish and Wildlife Priority and Habitat and Species (PHS) database (WDFW 2025a; Figure 7) identifies mule deer (*Odocoileus hemionus hemionus*) and black-tailed deer (*Odocoileus hemionus columbianus*) winter range, oak forest, oak/pine mixed forest, shrub-steppe habitat, five occurrences of WGS onsite, and California mountain kingsnake (*Lampropeltis zonata*) in the quarter township. ELS partially agrees with PHS mapped habitat and occurrences,

as oak forest, oak/pine mixed forest, and WGS nests were observed onsite. However, ELS did not observe shrub-steppe habitat onsite.

Table 1. Listed Species Mapped in or Near the Study Area

Species	State Status[1]	Federal Status[2]	Critical Habitat in Vicinity[3]	Suitable Habitat in Vicinity
Mammals				
Gray wolf (*Canis lupus*)	Endangered	Endangered	No	Yes
Mule deer[4] (*Odocoileus hemionus hemionus*)	Not Listed	Not Listed	None Designated	Yes
Black-tailed deer[4] (*Odocoileus hemionus columbianus*)	Not Listed	Not Listed	None Designated	Yes
Birds				
Northern spotted owl (*Strix occidentalis caurina*)	Endangered	Threatened	No	Yes
Yellow-billed cuckoo (*Coccyzus americanus*)	Endangered	Threatened	No	No
Reptiles				
California mountain kingsnake (*Lampropeltis zonata*)	Candidate	Not Listed	None Designated	No
Insects				
Monarch butterfly (*Danaus plexippus*)	Candidate	Candidate	None Designated	No
Suckley's cuckoo bumble bee (*Bombus suckleyi*)	Not Listed	Proposed Endangered	None Designated	Yes

[1]WDFW 2025b and USFWS 2025b. [2]**Endangered** - In danger of becoming extinct or extirpated; **Threatened** - Likely to become endangered within the foreseeable future throughout all or a significant portion of its range and that has been formally listed as such in the Federal Register under the Federal Endangered Species Act; **Sensitive** - Vulnerable or declining and could become Endangered or Threatened in the state; **State Candidate** species include fish and wildlife species that the Department will review for possible listing as State Endangered, Threatened, or Sensitive. A species will be considered for designation as a State Candidate if sufficient evidence suggests that its status may meet the listing criteria defined for State Endangered, Threatened, or Sensitive. [3]USFWS 2025b. [4]Mule and black-tailed deer are not listed species but are both considered a priority species by WDFW.

LISTED SPECIES ASSESSMENTS

MAMMALS

The gray wolf is a carnivorous keystone predator historically found in temperate forests, mountains, tundra, taiga, and grasslands throughout the United States, Canada, and Mexico. In the United States, current populations exist or are believed to exist in California, Michigan, Minnesota, Nevada, Oregon, Washington, and Wisconsin (USFWS 2025b). Wolves are habitat generalists that prey primarily on ungulates but also prey on smaller mammals, birds, and fish. Gray wolves are highly social and live in packs which usually consist of a breeding pair, their offspring from a previous year, and new pups. The pack often hunts, feeds, travels, and rests together, and pup-rearing responsibilities are often shared. Wolfs often develop dens in

underground burrows but also use abandoned beaver lodges, hollow trees, and shallow rock caves (WDFW 2025b). The site does not overlap with designated critical habitat for this species but could provide suitable habitat for wolves.

Mule and black-tailed deer are not listed federally or by Washington State; however, WDFW considers them a priority species. Mule and black-tailed deer are considered "edge" species, meaning they occur primarily in areas with both forested and open components, allowing them to forage and access cover for protection from predators. Deer eat rapidly and rely primarily on browse, grass and other herbaceous species, fruit, nuts, fungi, lichen, and garden crops (WDFW 2025b). No critical habitat has been designated for this species; however, the site does provide suitable habitat for mule and black-tailed deer.

Birds

The northern spotted owl is a medium sized predatory bird that inhabits structurally complex forests from southwestern British Columbia through Washington and Oregon, and into northern California. They rely on older forested habitats because older forests provide characteristics and structures for nesting, roosting, and foraging (Federal Register 2023). Northern spotted owl diets vary across years, seasons, geographical ranges, and forest type, but their preferred food sources include small mammals such as northern flying squirrels, bushy-tailed woodrats, and snowshoe hares (WDFW 2025b). Nesting and roosting habitat are nearly identical; however, nesting habitat most often includes the incidence of large trees with various deformities or large snags suitable for nest placement (Federal Register 2023). The site does not overlap with designated critical habitat for this species. The site may provide suitable habitat for northern spotted owls; however, ideal habitat conditions for this species are not present and it is unlikely that northern spotted owls exist onsite.

The yellow-billed cuckoo is a neotropical migrant that winters in South America and breeds west of the Rocky Mountains in North America from Mexico to southern British Columbia. They are secretive birds that are in the Pacific Northwest for the nesting season from June through August, then they migrate south (Federal Register 2013). Suitable breeding habitat in the region includes cottonwood and willow bottoms along the Willamette and lower Columbia Rivers. There is designated critical habitat; however, there is none in Washington or Oregon (Federal Register 2021). No known nesting or breeding sites are mapped in the project area (WDFW 2025a) and there is no suitable habitat in the study area.

Reptiles

The Washington populations of the California mountain kingsnake are limited to the southernmost areas of eastern Skamania County and western Klickitat County, and this population is separated from the rest of the species' range by approximately 200 miles. They are found in moist microhabitats in Oregon white oak – ponderosa pine forests and individuals are usually found under woody debris and rocks. They spend the colder months dormant and become active in late March or April through October, with egg laying generally occurring in June or July (WDFW 2025b). The oak woodland onsite exhibits dry understory conditions that would not be suitable habitat for the California mountain kingsnake.

INSECTS

According to US Department of Agriculture (USDA) database, Monarch butterflies can be found in fields, roadside areas, open areas, wet areas, or urban gardens; milkweed and flowering plants are needed for monarch habitat (USDA 2024). Adult monarchs feed on the nectar of many flowers, but they breed only where milkweeds are found. Showy milkweed is the dominant milkweed species in Washington, and it is common along roadsides and in riparian areas of eastern Washington. Given there was no milkweed observed in the study area, no suitable habitat is present and no impacts to the Monarch butterfly are anticipated from the proposed project.

Suckley's cuckoo bumble bee is an obligate social parasite of other *Bombus* species. All female Suckley's cuckoo bumble bees can reproduce but cannot provision their own offspring because they are unable to produce a worker caste, enough wax for nest construction, and have no pollen-collecting baskets on their hind legs (WDFW 2025b). They rely on habitats with rich floral resources throughout the nesting season, and many select specific sites for obtaining nectar and pollen. The Suckley's bumble bee has a short to medium-length tongue, requiring shallow to medium-depth flowers for foraging. They require above and below-ground sites, such as logs, stumps, and abandoned rodent and ground-nesting bird nests, for overwintering and nesting (WDFW 2025b). No critical habitat has been designated for this species; however, the site does provide suitable habitat for Suckley's cuckoo bumble bee.

AVOIDANCE AND MINIMIZATION

AVOIDANCE

The preferred mitigation sequencing of first avoidance, then minimization, and finally compensation for unavoidable impacts is required for projects that impact critical areas. Although construction of the unpermitted road resulted in the removal of two oaks, the remaining project components have been designed to avoid impacts to the maximum extent practicable by locating the new proposed road in an area that doesn't require oak removal, and all other activities associated with the vineyard establishment in open areas that don't require tree removal. Impacts to WGS and their nests will be avoided entirely by establishing a 25-foot "no cut" buffer consistent with the SRM plan. The proposed road, barn, garden, solar arrays, and vineyard will avoid oak and WGS impacts entirely due to their placement in open areas onsite.

MINIMIZATION

Oak impacts could not be entirely avoided due to the density of oaks onsite. However, impacts have already been minimized to the maximum extent possible by constructing the existing, unpermitted road in an area where oak removal could be minimized, resulting in the removal of only two oaks. The landing location at the terminus of the existing road was selected to support the approved forest practice, providing a location for felled tree storage during thinning activities. Alternate road locations that provide access to the landing are limited due to the density of oaks onsite, and an alternate location would have resulted in the removal of additional oaks. Impacts will be further minimized by utilizing best management practices (BMPs).

Best Management Practices

All construction will strictly adhere to the designated construction area. WGS nests will be identified and demarcated prior to tree removal activities to avoid inadvertent impacts. All conifer tree removal will strictly adhere to the treatment plan and area identified by SRM. BMPs utilized prior to, during, and after construction to further minimize impacts to critical areas are as follows:

- Install silt fencing or similar measures to control sedimentation and general ground disturbance.
- Locate construction access and staging and stockpile areas outside of oak canopy.
- Limit ground disturbance to only those areas necessary to construct project elements.
- Grading will occur during the dry season to minimize surface runoff.
- Use a water truck as needed during construction to control fugitive dust.
- Maintain, repair, and service vehicles and equipment outside of any critical area onsite.
- Remove construction waste materials from work site and dispose and/or recycle.
- Maintain a spill kit onsite.
- Restore disturbed areas by applying a native grass seed mix after construction activities are complete.

Unavoidable Impacts

The project has removed two oak trees, resulting in the loss of approximately 0.02 acres (670 sq. ft.) of oak canopy removal (Figure 4; Table 2).

Table 2. Impact Summary

Activity	Impact Type	Canopy Loss Impact
Road Construction	Oak Canopy Loss from Removing Two Oak Trees	0.02 acres (670 sq. ft.)

Oak Mitigation Discussion

Oak Woodland Determination

Mitigation for impacts to oak woodlands differs from mitigation for impacts to individual oaks. As such, an assessment must be completed to determine whether the project impacts an oak woodland or individual oaks. Each oak on- and offsite is assigned a habitat area with a 118-foot radius, producing an area of approximately one acre per oak to simplify calculations (Nolan and Azerrad 2024). If two or more of these habitat areas overlap, further investigation is required to determine if they meet the definition of an oak woodland. To be considered an oak woodland, there must be a minimum density of five large oaks per acre and the oak component must be no less than 25 percent of the total canopy cover (Nolan and Azerrad 2024). In this case, the oak component of the forested canopy comprises approximately 52 percent of the designated habitat area, satisfying the criteria and designating the habitat as priority oak woodland. Table 3 summarizes the completed oak woodland assessment, which is also depicted on Figure 3.

According to WDFW's oak woodland functional assessment, the onsite oak woodland is moderately functional (Appendix D). The majority of oaks onsite are at least 20 feet tall, produce acorns, have cavities and broken branches, and do not have galls. Downed logs and standing snags are present onsite, and many oaks contained bugs and rot. The understory is primarily comprised of herbaceous species, with approximately 60 percent herbaceous cover and approximately 20 percent shrub cover. Approximately 20 percent of the ground surface was bare or covered with leaf litter and duff at the time of the site visit. Non-native and invasive species such as Canada thistle, wild cucumber, and prickly lettuce comprise approximately 5 percent of herbaceous cover and no invasive trees, shrubs, or woody vines were observed.

Table 3. Oak Woodland Determination

Identifier	Habitat Area Total	Oak Dripline Total	Oak Canopy Coverage
Forested Canopy	9.73 acres	5.03 acres	52 percent

ONSITE MITIGATION RATIONALE

According to the WDFW Guidance, compensatory mitigation should ideally take place onsite or as close to the site as possible when options for onsite mitigation are limited, and any plan for compensatory mitigation must address both the physical loss of oak habitat and the temporal loss in ecological function (Nolan and Azerrad 2024). This mitigation plan accounts for both the physical and temporal losses from the project, as described later in this section. Onsite mitigation is ideal for this project, as oak woodland currently exists onsite, and enhancement activities are already underway as part of the approved forest practice. The existing woodland provides habitat for temporal mitigation activities and open areas provide opportunity for physical mitigation. The landowners are required to maintain the site regularly and conduct monitoring activities to ensure success of the forest practice, further supporting onsite mitigation as the ideal option. Physical impacts will be offset by planting 6 new oaks and 28 understory shrubs onsite and temporal impacts will be offset by enhancing 0.03 acres (1,340 sq. ft.) of the existing oak woodland by removing invasive species and competing conifers.

PHYSICAL LOSS REPLACEMENT

After it has been determined whether the project will impact oak woodland or individual oaks, mitigation to offset project impacts must be calculated. Physical mitigation is designed to offset the physical loss of oaks, and the designated replacement ratio is 2:1 for lost canopy. After the total area for physical mitigation has been determined, this number is then divided by 87.12 (approximately 9-foot spacing) to represent the number of oaks that can be planted within the required area (Nolan and Azerrad 2024; Table 4).

ADDITIONAL CONSIDERATIONS

The Guidance recommends oak saplings installed to satisfy mitigation requirements be at least two to three years old with a diameter of 0.25 inches, which is approximately the size of bare-root nursery stock. Oaks are slow-growing trees and mortality rates are higher for smaller stock than those for larger stock, as younger oak saplings are more prone to disturbance and stress (Gould et. al. 2011). The Guidance considers resource competition when determining the

required spacing of new plantings; however, 0.25-inch DBH saplings are used in these calculations and high mortality of installed species over time is assumed due to resource competition as the oaks establish. Oaks with little competition have higher growth rates than those with moderate or high competition (Gould et. al. 2011). As such, if saplings larger than 0.25 inches are installed, they should be planted further apart to limit resource competition. Although the Guidance recommends new plantings be maintained and monitored, regular maintenance is not factored into the calculations to determine the density of mitigation plantings. Regular maintenance increases the survivorship and growth of oak saplings and should be considered when determining the density of new plantings (Gould et. al. 2011). As such, ELS recommends a smaller quantity of larger saplings, at least one-inch DBH, be installed in the Physical Mitigation Area. This mitigation plan is designed to ensure high survivorship of installed species and contingency measures require the replacement of all failed oaks as described in the *Onsite Enhancement Plan* section of this report.

Table 4. Required Mitigation for Physical Impacts

Dripline Impact	Mitigation Ratio[1]	Mitigation Area	Spacing	Oak Quantity[4]
0.02 acres (670 sq. ft.)	2:1	0.03 acres (1,340 sq. ft.)	87.12 sq. ft.[1,2]	16
			225 sq. ft. [3]	6

[1]Nolan and Azerrad 2024. [2]Approximately 9-foot on-center. [3]Approximately 15-foot on-center. [4]Mitigation Area ÷ Spacing = Oak Quantity.

TEMPORAL LOSS REPLACEMENT

Because oaks are slow-growing trees, temporal mitigation is designed to offset the temporal functional loss of an impacted oak by enhancing and/or preserving existing oak habitat. A functional assessment must be completed before and after development to determine how functional the woodland is in its current state and how functional it will be after project development. These assessments will determine the mitigation ratio to be used. After mitigation ratios have been established, the lost dripline is used to determine how much area is needed to offset temporal impacts. Because a portion of the project has already been completed, the pre-development assessment was completed using current conditions. The functionality of the woodland is considered moderate in its current state, with a score of 68.43 percent. The post-development woodland is also predicted to be moderately functional, with a score of 71.43 percent (Appendix D; Table 5). The increased score post-development is due in part to the enhancement activities associated with the forest practice. Oak mitigation calculations and a summary of mitigation quantities and activities are in Appendix E.

Table 5. Required Mitigation for Temporal Impacts

Dripline Impact	Oak Woodland Functions[1]		Mitigation Ratio[1]	Mitigation Area
	Existing	Proposed		
0.02 acres (670 sq. ft.)	68.43% (Medium)	71.43% (Medium)	1:1	0.02 acres (670 sq. ft.)

[1]Nolan and Azerrad 2024. [2]Mitigation Area ÷ Spacing = Oak Quantity.

Additional Considerations

The Guidance recommends 20 years of monitoring after installation to ensure the success of the mitigation area, with the installation of acorns and young saplings used as the basis of this determination. Oaks are slow growing, requiring two to three years to reach 0.25 inches in diameter (Nolan and Azerrad 2024). The recommended 20-year monitoring term is ecologically sound for small stock such as acorns and young saplings, as younger trees will take longer to establish.

Sapling age and size should be considered when determining the monitoring term length, as larger saplings are more mature and less sensitive to stress during and after installation. Larger saplings have higher success rates when used as mitigation plantings, as a one-inch DBH oak is between 15 to 20 years old on average (Hann & Larsen 1991). Because larger saplings will establish faster and are more likely to succeed, a reduced monitoring term should be considered. Mortality of a relocated oak that has established successfully within the first five years after installation is unlikely to fail later, as signs of stress or environmental incompatibility will likely manifest early. As such, ELS recommends a 5-year monitoring term, contingent on the installation of saplings with a DBH of at least one inch.

Onsite Enhancement Plan

Mitigation Goals and Discussion

The goal of this onsite mitigation plan is to fully compensate for oak woodland impacts associated with establishment of the vineyard. Approximately 0.03 acres (1,340 sq. ft.) of open area along the eastern site boundary will be utilized to offset physical impacts at the required 2:1 ratio, extending the current woodland by installing six, one-inch DBH oak saplings and accompanying understory vegetation (Figure 5, Table 7). Temporal mitigation requires approximately 0.02 acres (670 sq. ft.) of existing oak woodland to be enhanced. The entire onsite oak woodland (approximately 3.43 acres) will be enhanced as part of the approved forest practice, exceeding this requirement. Enhancement activities include the removal of invasive species and the removal of competing conifers, releasing the oak canopy and allowing more understory vegetation to establish.

Objectives and Performance Standards

This mitigation plan has been designed to ensure high survivorship of installed species, using larger stock and requiring high survivorship of installed species. Because large saplings will be installed in place of smaller stock, monitoring and maintenance of the physical and temporal mitigation areas will occur for a 5-year period with annual monitoring and reporting occurring in Years 1, 2, 3, and 5. Monitoring and maintenance will ensure the mitigation areas are meeting the mitigation plan's goals, objectives, and performance standards. To achieve this goal, the following objectives and performance standards are proposed:

Objective 1: Control invasive plant species including, but not limited to, Canada thistle, knapweed, star thistle, English ivy (if found; Hedera helix), and Himalayan blackberry (if found; Rubus armeniacus) throughout the Temporal and Physical Mitigation Areas.

Performance Standard 1a: Remove existing invasive species in the mitigation areas. Document the removal in the as-built report.

Performance Standard 1b: In all years, invasive plant species will not exceed 15 percent aerial cover within the mitigation areas.

Objective 2. Create a minimum of 0.03 acres of oak woodland by planting Oregon white oak trees and understory vegetation within the Physical Mitigation Area.

Performance Standard 2a: Oregon white oak trees will be installed at spacing intervals of 15-foot on-center. Document the location of planted species in the as-built report.

Performance Standard 2b: Native understory plantings will be installed at spacing intervals of 6-foot on-center. Document in the as-built report.

Performance Standard 2c: In Years 1, 2, 3, and 5 of the monitoring period, planted oaks will achieve 100 percent survival. If dead oaks are replaced, this performance standard will be met. Document in annual monitoring report.

Performance Standard 2d: In Year 1 of the monitoring period, installed understory plantings will achieve 100 percent survival. If dead plants are replaced, this performance standard will be met. Document in annual monitoring report.

Performance Standard 2e: In Years 2, 3, and 5 of the monitoring period, understory plantings will achieve 90 percent survival. If dead plants are replaced, this performance standard will be met. Document in annual monitoring report.

Objective 3: Provide long-term protection for the Physical and Temporal Mitigation Areas.

Performance Standard 3a: Record a conservation covenant or similar legal mechanism protecting the Physical and Temporal Oak Mitigation Areas in perpetuity. This performance standard will be met when the protection mechanism is recorded by the County, and a copy is provided in the as-built report.

PLANTING SPECIFICATIONS

Both mitigation areas will be cleared of invasive species and the Physical Mitigation Area will be planted with oak saplings and native shrubs, providing greater habitat diversity, refuge, and forage opportunities than currently exist onsite by increasing total oak woodland habitat onsite. The proposed species were selected due to their presence onsite and association with oak woodlands (Table 7). Actual planting locations will be determined in the field, with consideration

to the listed spacing and density to produce the most natural appearance possible. The enhancement will also allow native understory plants to establish in areas currently shaded by conifers and in areas currently covered with invasive species, resulting in an overall net gain in ecological functions. Impacts and proposed mitigation measures are summarized in Table 6.

Table 6. Impact and Mitigation Summary

Activity	Impact Area	Impact Type	Mitigation Ratio[1]	Mitigation Area	Mitigation Activities
Oak Canopy Removal	0.02 acres (670 sq. ft.)	Physical	2:1	0.03 acres (1,340 sq. ft.)	• Remove invasive species • Install native species • Maintain and monitor for 5 years
		Temporal	1:1	0.02 acres (670 sq. ft.)	
			Total	**0.05 acres (2,010 sq. ft.)**	

[1]Nolan and Azerrad 2024.

Table 7. Planting Specifications

Common Name	Scientific Name	Stock	Spacing[1, 2]	Quantity
Trees				
Oregon white oak	*Quercus garryana*	One inch DBH	15-foot on-center	6
Shrubs[3]				
Nootka rose	*Rosa nutkana*	One gallon container	6-foot on-center	7
Snowberry	*Symphoricarpos albus*			7
Oceanspray	*Holodiscus discolor*			7
Red-flowering currant	*Ribes sanguineum*			7
			Total Shrubs	**28**

[1]Shrubs shall be planted a minimum distance of five feet from oak plantings. [2]Actual planting locations will be determined in the field. [3]A planting calculator was used to determine shrub quantity utilizing 75 percent of the required mitigation area.

PLANTING PLAN

Site Specifications

- Stake or flag the planting area.
- Investigate for and remove invasive and competing species from both the Physical and Temporal Mitigation Areas.
- Install mitigation plantings in the Physical Mitigation Area according to planting implementation specifications.

Ball and Burlap Planting Implementation

- Plant the oaks in the fall (October-November) or early spring (Feb-March) at the intervals listed in Table 7. Space the trees somewhat irregularly with no shrub plantings installed within five feet of the planted oak. Larger caliper oaks may need heavy equipment such as a mini excavator to dig holes large enough for the roots.
- Ensure the planting hole is twice as wide and twice as deep as the root ball.
- Remove any twine or wire basket around the root ball but leave the burlap in place.
  - Remove if the burlap is synthetic or hindering root growth.
- Place the root balls in the planting holes so that their roots can extend down entirely and do not bend upward or circle inside the hole (no "J" or "U" roots).
- Position the root crowns so that they are at or slightly above the level of the surrounding soil.
- Compact the soil around the planted species to eliminate air spaces.
- Install support stakes and secure tree by attaching flexible ties or twine to the tree trunk.
- Install tree protection tubes and mulch around new plantings to discourage herbivory.
- Irrigate all newly installed plants as site and weather conditions warrant.

Ball and Burlap Stock

- Ball and burlap stock will be purchased from a native plant nursery.
- Ball and burlap stock will have a minimum DBH of one inch and a preferred minimum height of six feet.
- Stock will be kept cool and moist prior to being planted.
- Ball and burlap stock will have well-developed roots and sturdy stems, with an appropriate root-to-shoot ratio.
- Unplanted potted stock will be properly stored at the end of each day.
- The planting technician will be responsible for inspecting plant stock prior to and during planting, culling unacceptable plant materials.

Understory Planting Implementation

- Install plants in late fall (October-November) or early spring (February-March) at the intervals listed in Table 7.
- Space plants somewhat irregularly to encourage heterogeneity in the density and appearance of the mitigation area.
- Place plants so that their roots can extend down entirely and do not bend upward or circle inside the hole (no "J" or "U" roots).
- Position the root crowns so that they are at or slightly below the level of surrounding soil.
- Compact the soil around the planted species to eliminate air spaces and apply mulch.
- Irrigate all installed plants as site and weather conditions warrant.

Potted Stock

- Potted species will be purchased from a native plant nursery.
- Potted plants will be a minimum size of one-gallon.
- Potted stock will be kept cool and moist prior to being planted.

- Potted stock will have well-developed roots and sturdy stems, with an appropriate root-to-shoot ratio.
- Unplanted potted stock will be properly stored at the end of each day.
- The planting technician will be responsible for inspecting potted plant stock prior to and during planting, culling unacceptable plant materials.

MONITORING, MAINTENANCE, AND CONTINGENCY MEASURES

Monitoring

Monitoring will occur annually in Years 0 (as-built), 1, 2, 3, and 5 during the growing season, preferably during the same two-week period to better compare data. The following information will be gathered in the mitigation area:

Physical Mitigation Area: Plant counts will be conducted in Years 1, 2, 3, and 5 to determine percent survival of installed species. Native volunteers may be included to meet performance standards. Percent aerial cover of invasive species will be assessed in Years 1, 2, 3, and 5 to determine if invasive species are being adequately controlled. At least two monitoring plots will be established to evaluate invasive species cover.

Temporal Mitigation Area: Percent aerial cover of invasive species will be assessed in Years 1, 2, 3, and 5 to determine if invasive species are being adequately controlled. At least five monitoring plots will be established to evaluate invasive species cover.

Additionally, one photostation will be established at each monitoring plot to photo-document vegetation establishment and invasive species management. Photostation locations and the direction in which the picture is taken will also be recorded in the as-built report. General health of plants in the mitigation areas will also be monitored, noting specific problems and potential causes. The goal of monitoring will be to determine if the previously stated performance standards are being met. Monitoring reports will be submitted no later than December 31st of each monitoring year to the CRGC. Year 1 monitoring will begin a minimum of one year after plant installation.

At minimum, the following items will be included in the annual report:

- Location map and as-built drawing, including any changes.
- Historic description of the project, including dates of plant installation, current year of monitoring, and remedial actions taken (if any).
- Description of monitoring methods.
- Documentation of vegetative performance standards and overall development of plant communities.
- Assessment of invasive plant species and recommendations for management.
- Photographs from established photo stations.
- Observations of wildlife, including amphibians, invertebrates, reptiles, birds, and mammals. If photographs are taken, they will be included.

- Summary of the maintenance and contingency measures completed for the past year and proposed for the next year.

Maintenance

Maintenance will include the following:

- Irrigating the planting area every other week or as needed in the dry season for the first three years. Taper watering in Years 2 and 3, watering approximately every 3 to 4 weeks in the dry season, or as needed.
- Remove competing herbaceous species at least three times yearly within a 3-foot radius of planted species and re-apply mulch, as needed.
- Weed-eat or mow invasive species as needed during the growing season.
- Replace dead or failed plants as described for the original installation to meet the minimum performance standards.

Contingency Measures

If the performance criteria are not met, steps will be taken to correct the situation in a timely manner. The following steps will be implemented when an area is identified as failing or potentially failing:

- Identify the cause(s) of the failure or potential failure.
- Identify the extent of the failure or potential failure.
- Implement corrective actions such as irrigating, fertilizing, and replanting.
- Document the activities and include this data in the monitoring reports.
- If a routine corrective action will not correct the problem, immediately consult with the appropriate agencies.
- Evaluate recommendations from resource agency staff and implement recommendations in a timely manner.

Funding for corrective actions will be the responsibility of the applicant.

LIMITATIONS

ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with our determinations. However, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

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FIGURES AND PHOTOPLATES

WASHINGTON

45.7129° Latitude
-121.4340° Longitude

LOCATION MAP

PROJECT VICINITY MAP

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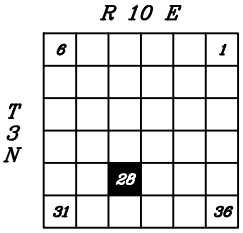
SCALE IN MILES



SITE

NOTE:
Quadrangle topographic map from USGS.

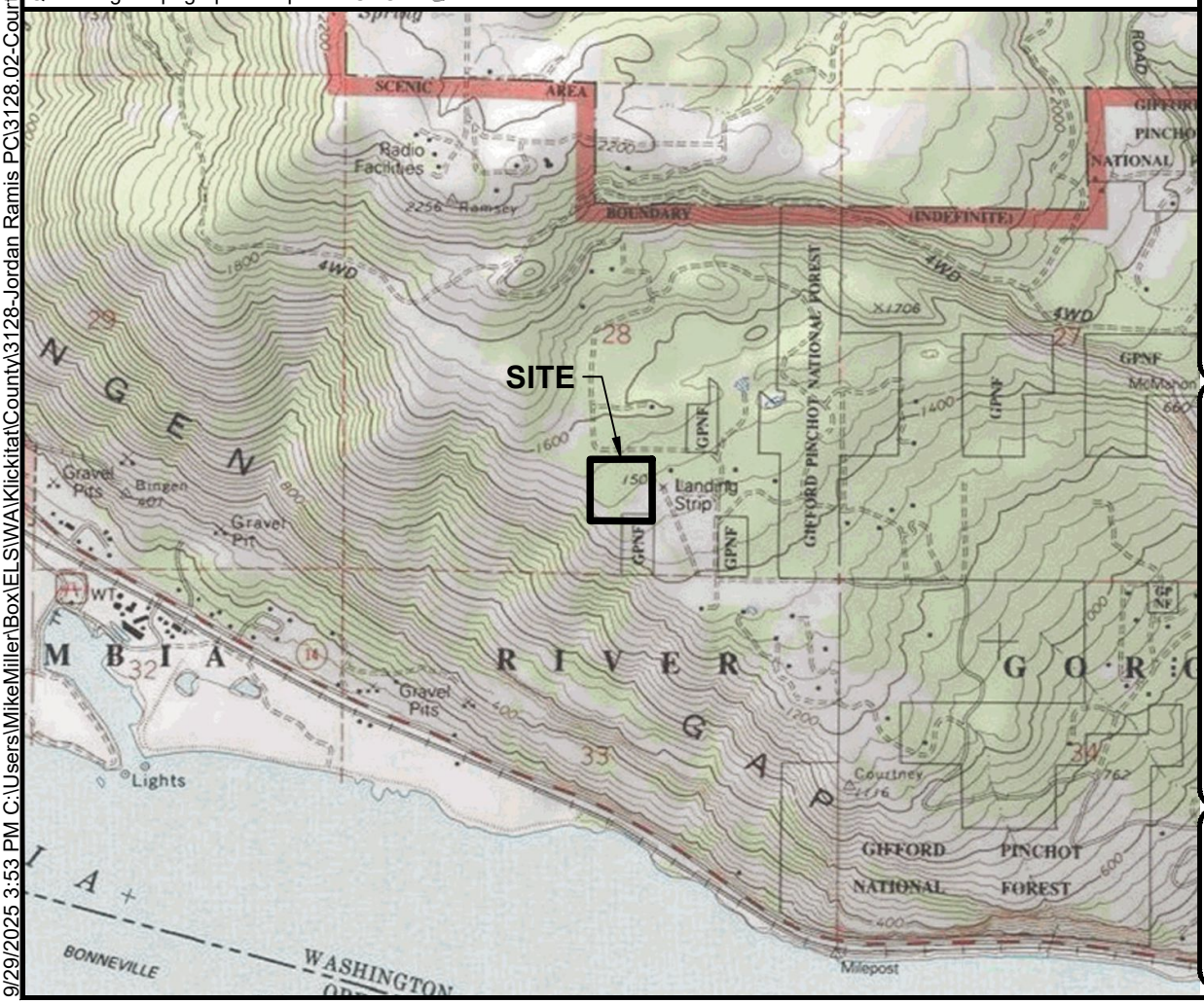


Figure 1
VICINITY MAP
Courtney Road Oak Mitigation
Jordan Ramis, PC
Klickitat County, WA
Section 28, Township 3N, Range 10E, W.M.

DATE: 9/29/25
DWN: MPM
REQ. BY: JB
PRJ. MGR: JB
CHK:
PROJECT NO: 3128.02

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Fax: (360) 414-9305
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Ecological Land Services

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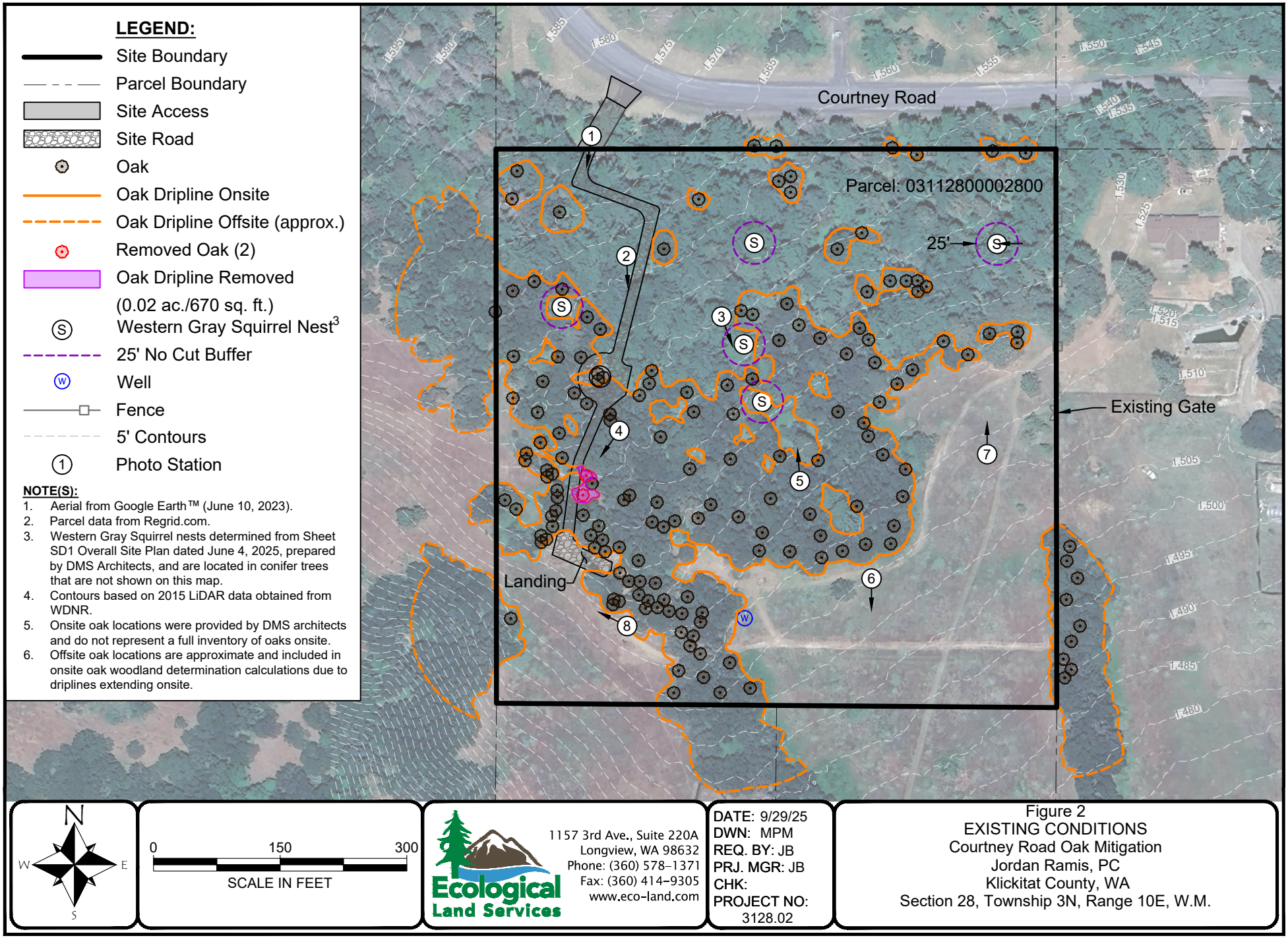

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Figure 2
EXISTING CONDITIONS
Courtney Road Oak Mitigation
Jordan Ramis, PC
Klickitat County, WA
Section 28, Township 3N, Range 10E, W.M.

9/29/2025 3:53 PM C:\Users\MikeMiller\Box\ELS\WA\Klickitat\County\3128-Jordan Ramis PC\3128.02-Courtney Road\3128.02-Figures CAD Only\3128.02-MT.dwg MikeMiller

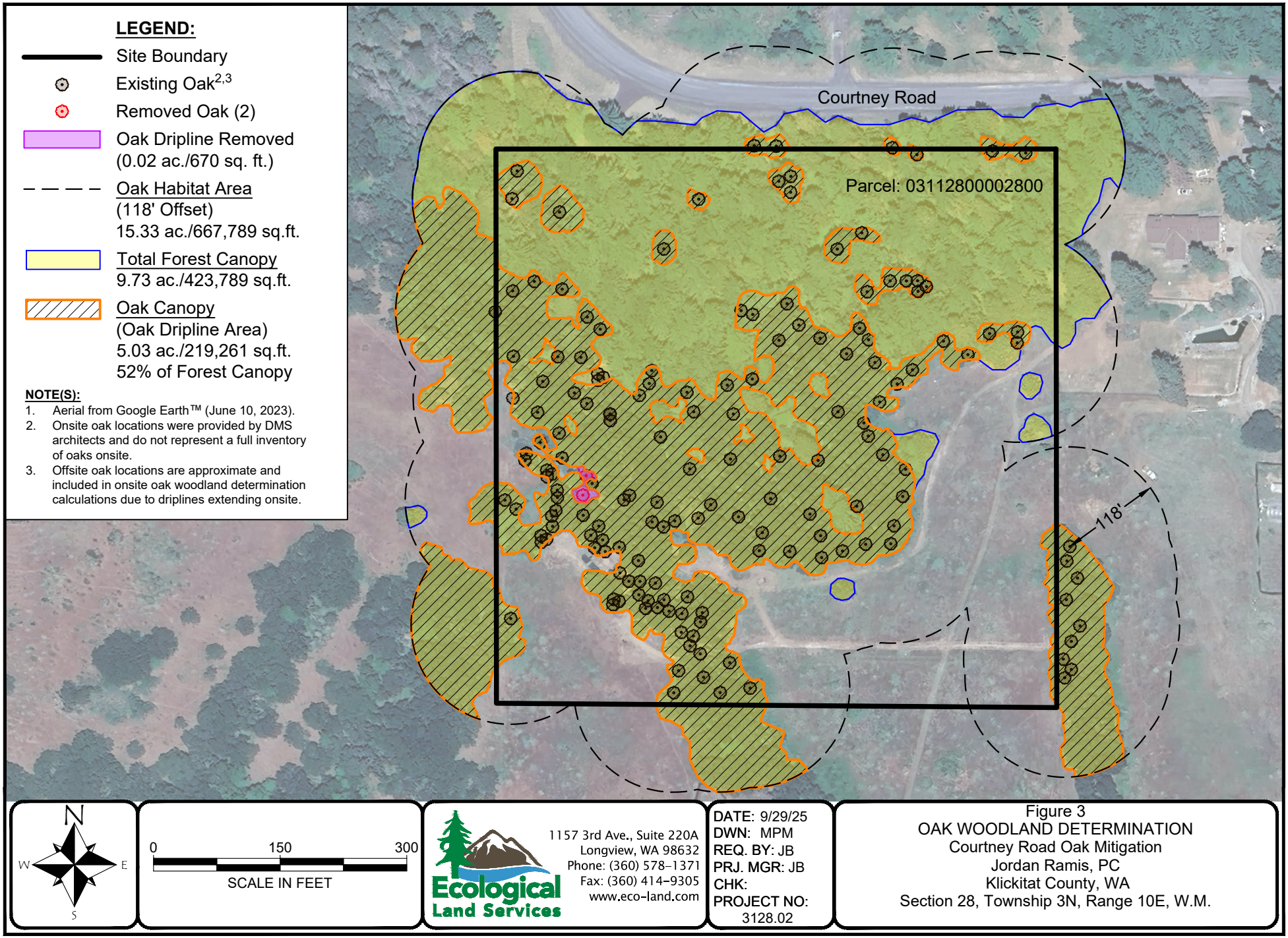

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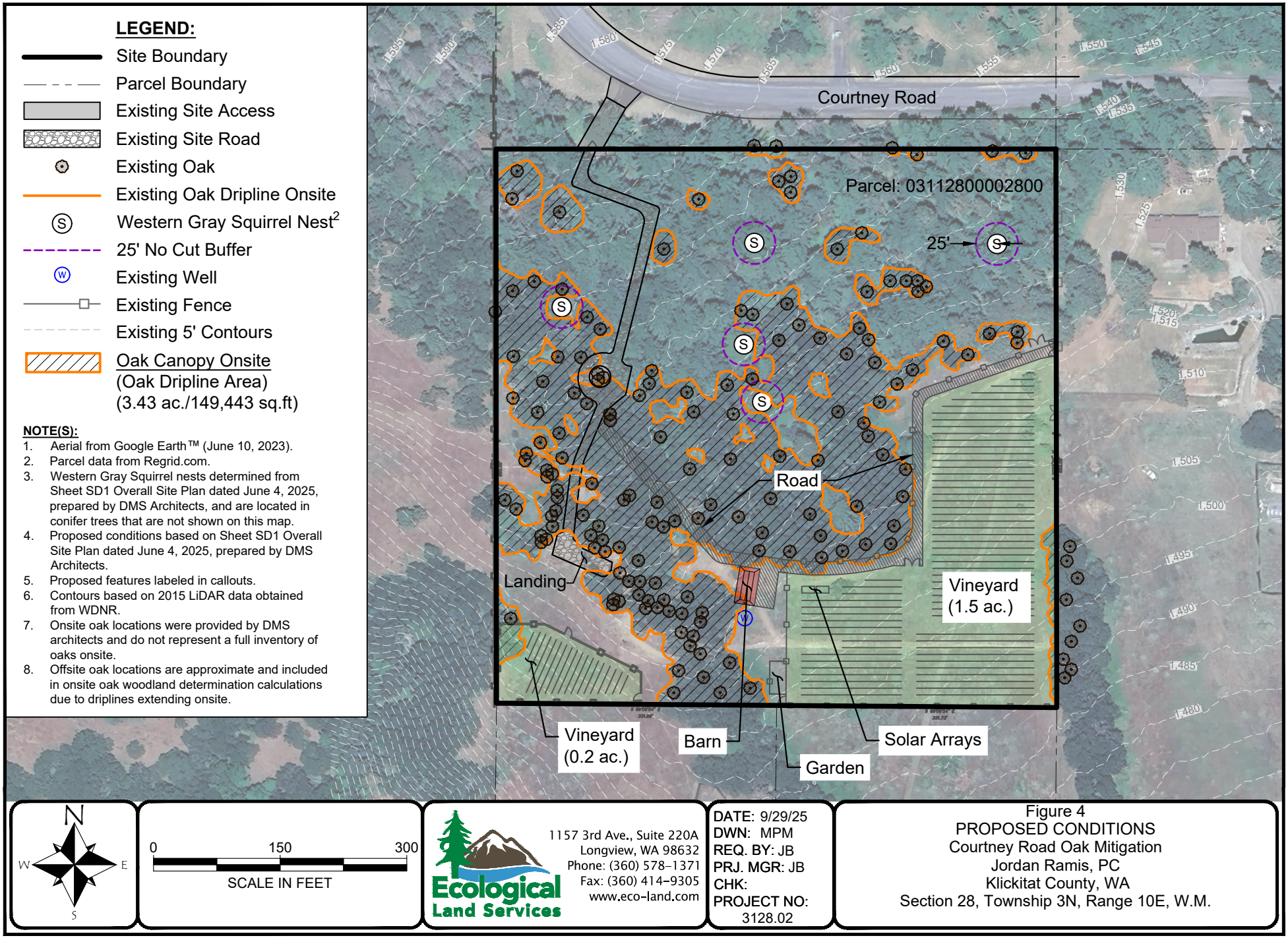
Figure 3
OAK WOODLAND DETERMINATION
Courtney Road Oak Mitigation
Jordan Ramis, PC
Klickitat County, WA
Section 28, Township 3N, Range 10E, W.M.



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DWN: MPM
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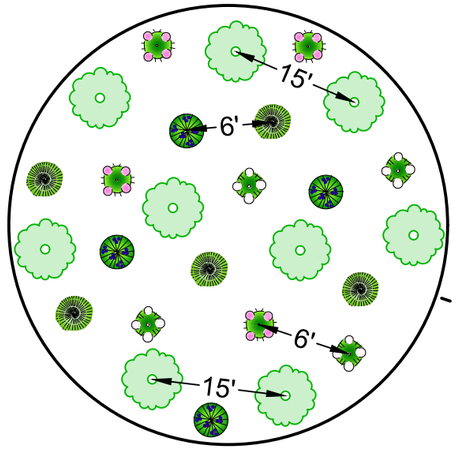
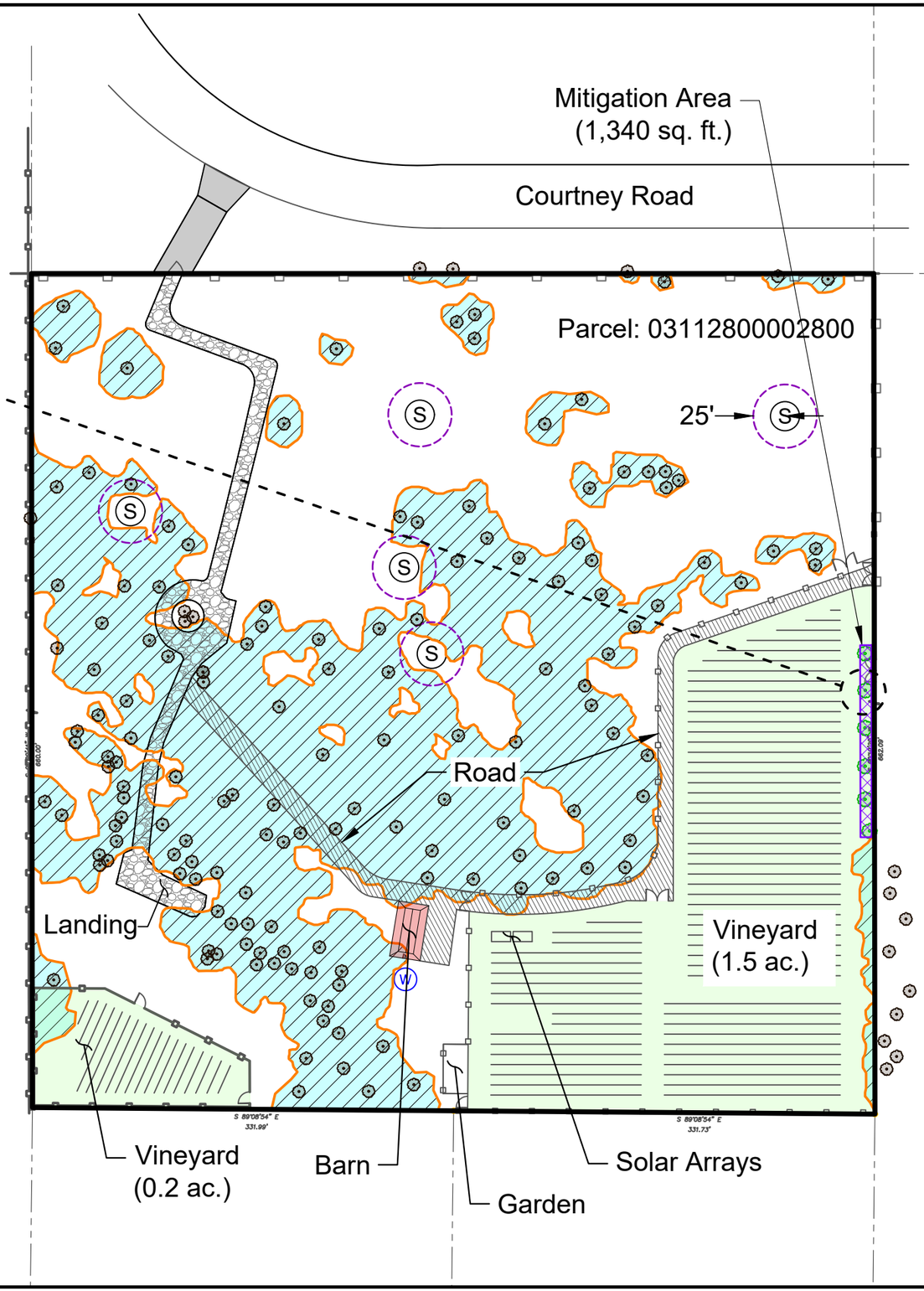
Figure 4
PROPOSED CONDITIONS
Courtney Road Oak Mitigation
Jordan Ramis, PC
Klickitat County, WA
Section 28, Township 3N, Range 10E, W.M.

LEGEND:

- Site Boundary
- Parcel Boundary
- Existing Site Access
- Existing Site Road
- Existing Oak
- Existing Oak Dripline Onsite
- Western Gray Squirrel Nest[2]
- 25' No Cut Buffer
- Existing Well
- Existing Fence
- New Oak (6)
- Physical Mitigation Area (0.03 ac./1,340 sq. ft.)
- Temporal Mitigation Area (3.43 ac./149,443 sq. ft.)
- Oak Canopy Onsite (Oak Dripline Area) (3.43 ac./149,443 sq.ft)



Planting Diagram:
(Not to Scale)



NOTE(S):

1. Aerial from Google Earth™ (June 10, 2023).
2. Parcel data from Regrid.com.
3. Western Gray Squirrel nests determined from Sheet SD1 Overall Site Plan dated June 4, 2025, prepared by DMS Architects, and are located in conifer trees that are not shown on this map.
4. Proposed conditions based on Sheet SD1 Overall Site Plan dated June 4, 2025, prepared by DMS Architects.
5. Proposed features labeled in callouts.
6. Contours based on 2015 LiDAR data obtained from WDNR.
7. Onsite oak locations were provided by DMS architects and do not represent a full inventory of oaks onsite.
8. Offsite oak locations are approximate and included in onsite oak woodland determination calculations due to driplines extending onsite.
9. Temporal impacts require 670 sq. ft. of mitigation area. Oak canopy enhancement to be completed as part of Forest Practices approvals satisfies this requirement, as all area within the forested canopy will be enhanced.

Mitigation Summary

Impact Type	Impact Area	Impact Type	Mitigation Ratio[1]	Mitigation Area
Oak Canopy Removal	0.02 acres (670 sq. ft.)	Physical	2:1	0.03 acres (1,340 sq. ft.)
		Temporal	1:1	0.02 acres (670 sq. ft.)
			Total	**0.05 acres (2,010 sq. ft.)**

[1]Nolan and Azerrad 2024.

Planting Specifications

	Common Name	Scientific Name	Stock	Spacing[1]	Quantity
	Trees				
	Oregon white oak	*Quercus garryana*	One inch DBH	15-foot on-center	6
	Shrubs[2]				
	Nootka rose	*Rosa nutkana*	One gallon container	6-foot on-center	7
	Snowberry	*Symphoricarpus albus*			7
	Oceanspray	*Holodiscus discolor*			7
	Red-flowering currant	*Ribes sanguineum*			7
				Total Shrubs	**28**

[1]Shrubs shall be planted a minimum distance of five feet from oak plantings.
[2]A planting calculator was used to determine shrub quantity utilizing 75 percent of the required mitigation area.

Figure 5
MITIGATION PLAN
Courtney Road Oak Mitigation
Jordan Ramis, PC
Klickitat County, WA
Section 28, Township 3N, Range 10E, W.M.

DATE: 9/29/25
DWN: MPM
REQ. BY: JB
PRJ. MGR: JB
CHK:
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Figure 6
NRCS SOIL SURVEY
Courtney Road Oak Mitigation
Jordan Ramis, PC
Klickitat County, WA
Section 28, Township 3N, Range 10E, W.M.

DATE: 9/29/25
DWN: MPM
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LEGEND:

- Site Boundary
- NRCS Soil Boundary
- **721** Rock outcrop-Rubble land-Haploxerolls complex, 30 to 90 percent slopes. Not hydric.
- **798** Dalig loam, 5 to 30 percent slopes. Not hydric.

NOTE(S):

1. Map provided on-line by NRCS at web address: *http://websoilsurvey.nrcs.usda.gov/app/*

Figure 7
USFWS NATIONAL WETLANDS INVENTORY
Courtney Road Oak Mitigation
Jordan Ramis, PC
Klickitat County, WA
Section 28, Township 3N, Range 10E, W.M.

DATE: 9/29/25
DWN: MPM
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No mapped wetlands indicated onsite by US Fish & Wildlife Service.

LEGEND:

Site Boundary

Wetlands

Riverine

R4SBC Riverine, intermittent, streambed, seasonally flooded

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SCALE IN FEET

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NOTE(S):

1. Map provided on-line by US Fish & Wildlife Service at web address: *https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper*

Figure 8
WDFW PRIORITY HABITATS AND SPECIES
Courtney Road Oak Mitigation
Jordan Ramis, PC
Klickitat County, WA
Section 28, Township 3N, Range 10E, W.M.

DATE: 9/29/25
DWN: MPM
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LEGEND:

- Site Boundary
- Parcel Boundary
- Western Gray Squirrel Occurrence
- Western Gray Squirrel Occurrence
- Mule and Black-tailed Deer Regular Concentration
- Oak Forest Terrestrial Habitat
- Oak/Pine Mixed Forest Trerestrial Habitat
- Shrubsteppe Habitat Feature
- Californai Mountain Kingsnake Occurrence

NOTE: Map provided on-line by Washington State Department of Fish & Wildlife at web address:
http://apps.wdfw.wa.gov/phsontheweb/

Photo Point 1. Facing south. Shows conditions as you enter the site and the existing road.

Photo Point 2. Facing south. Shows general site conditions in forested areas and the existing road.

Photo Point 3. Facing south-southeast near one of the WGS nests.

Photo Point 4. Facing southwest. Shows general site conditions in forested areas and the existing road.

Ecological Land Services

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DATE: 8.10.2025
DWN: JB
PRJ. MGR: JB
PROJ.#: 3128.02

Photoplate 1
Jordan Ramis, PC
Courtney Road Oak Mitigation
Klickitat County, Washington
S28, T3N, R10E, W.M.

Photo Point 5. Facing north/northwest. Shows general site conditions in forested areas.

Photo Point 6. Facing south. Shows general site conditions in open areas.

Photo Point 7. Facing north. Shows forested canopy boundary.

Photo Point 8. Facing northwest. The landing is on the left side of the photo and the fire break is on the left and center.

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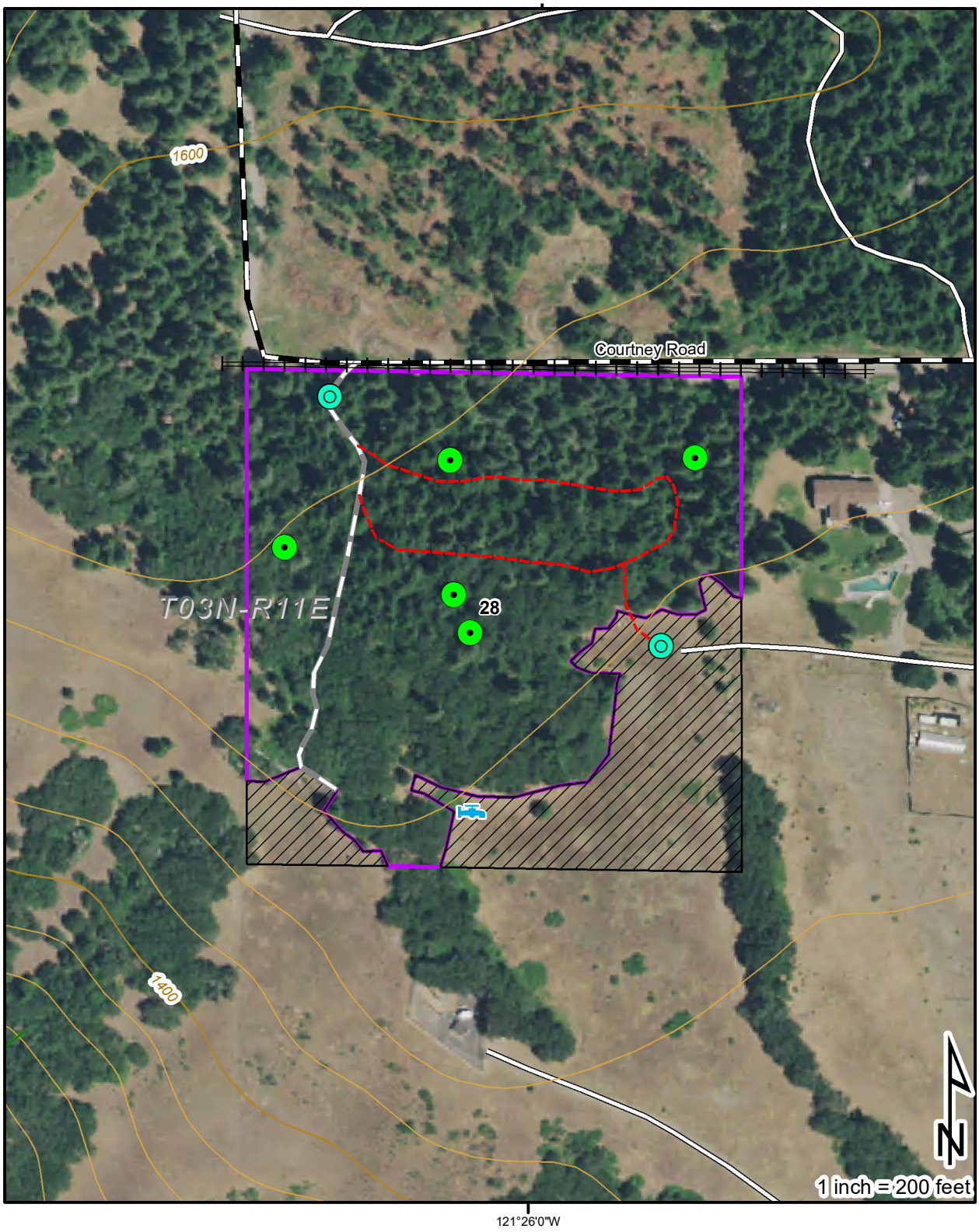
DWN: JB
PRJ. MGR: JB
PROJ.#: 3128.02

Photoplate 2
Jordan Ramis, PC
Courtney Road Oak Mitigation
Klickitat County, Washington
S28, T3N, R10E, W.M.

APPENDIX A

SKOOKUM RESOURCE MANAGEMENT TREATMENT MAP



Project: Spitzer Select
T03N R11E S28
Landowner: David Spitzer
9.42 acres - 2650' perimeter

Date: 2/27/2023

Well
WGS nests
Landings
Parcel
Treatment Area
Powerlines
Gravel-Rock, County-Primary
Gravel-Rock, Secondary
Dirt, County-Secondary
Closed Road
Skid corridors

APPENDIX B

ROUTINE DETERMINATION METHOD AND PLANT INDICATOR RATING DEFINITIONS

Routine Determination Method

The Routine Determination Method is defined according to the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory 1987)*; Western Mountains, Valleys, and Coast Region (Version 2.0)* (Corps 2010). The Routine Determination Method examines three parameters – vegetation, soils, and hydrology – to determine if wetlands exist in a given area. Hydrology is critical in determining what is a wetland, but if often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils are present, which would indicate that water is present for a long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Vegetation Indicator Status

The indicator status, following the scientific names of plant species, indicates the likelihood of the species to be found in wetlands according to the *National Wetland Plant List Indicator Rating Definitions* (Corps 2012). Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) - occur almost always under natural conditions in wetlands.
- **FACW** (facultative wetland) - usually occur in wetlands, but occasionally found in non-wetlands.
- **FAC** (facultative) - equally likely to occur in wetlands or non-wetlands.
- **FACU** (facultative upland) - usually occur in non-wetlands, but occasionally found in wetlands.
- **UPL** (obligate upland) - occur almost always under natural conditions in non-wetlands.
- **NI** (no indicator) - insufficient data to assign to an indicator category.

APPENDIX C

U.S. FISH AND WILDLIFE SERVICE IPAC RESOURCE LIST

IPaC U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Klickitat County, Washington

Local office

Washington Fish And Wildlife Office

(360) 753-9440
(360) 753-9405

1009 College St Se

Ste 215
Lacey, WA 98503-1249

https://www.fws.gov/office/washington-fish-and-wildlife

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Gray Wolf Canis lupus There is **final** critical habitat for this species. https://ecos.fws.gov/ecp/species/4488	Endangered

Birds

NAME	STATUS
Northern Spotted Owl Strix occidentalis caurina Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northwestern Pond Turtle Actinemys marmorata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Fishes

NAME	STATUS
Bull Trout Salvelinus confluentus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8212	Threatened

Insects

NAME	STATUS

Monarch Butterfly Danaus plexippus — Proposed Threatened
Wherever found
There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/9743

Suckley's Cuckoo Bumble Bee Bombus suckleyi — Proposed Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/10885

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs
The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

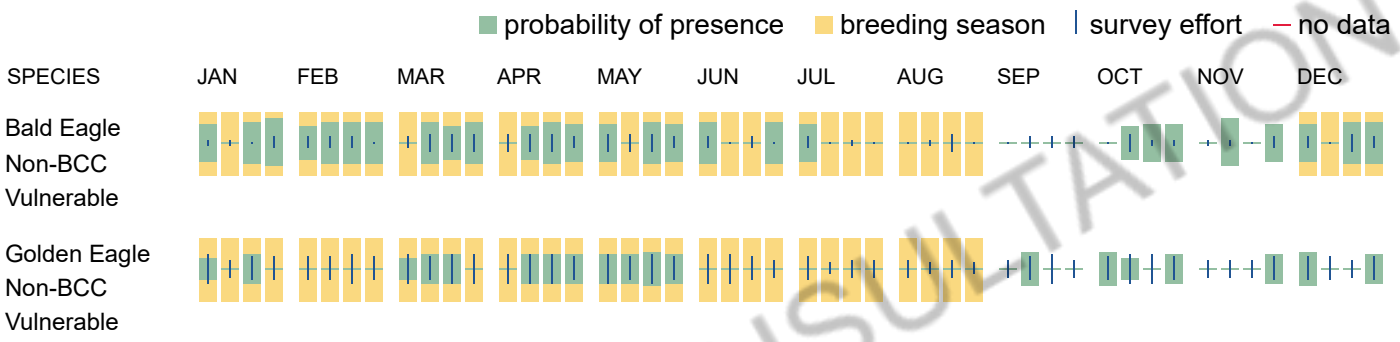
Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
American White Pelican pelecanus erythrorhynchos This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6886	Breeds Apr 1 to Aug 31

Bald Eagle Haliaeetus leucocephalus — Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Calliope Hummingbird Selasphorus calliope — Breeds May 1 to Aug 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9526

Cassin's Finch Haemorhous cassinii — Breeds May 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9462

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Evening Grosbeak Coccothraustes vespertinus — Breeds May 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-eared Owl asio otus — Breeds Mar 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

Northern Harrier Circus hudsonius — Breeds Apr 1 to Sep 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8350

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Rufous Hummingbird Selasphorus rufus — Breeds Apr 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

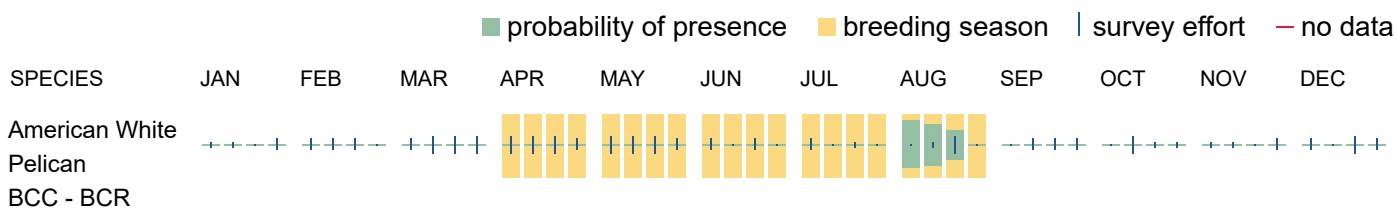
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

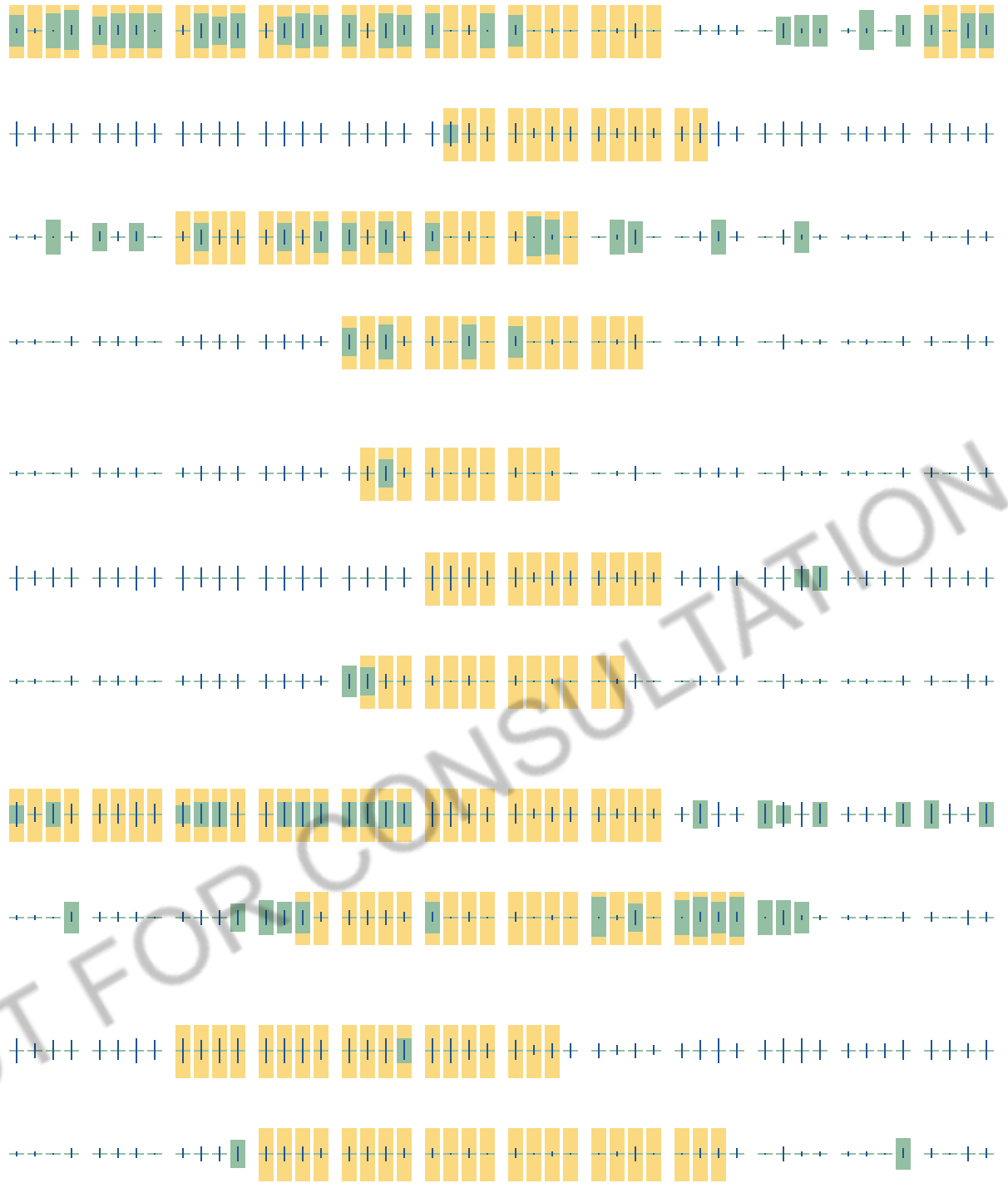
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern

have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX D

WDFW FUNCTIONAL ASSESSMENTS FOR OAK WOODLANDS

Oak Woodland Assessment: Existing Conditions

OAK HABITAT METRIC

Version 1.0

Name of Project Site:	Courtney Road	**Date Assessed:**	8/10/2025	**Elevation:**	1,600 feet
Data Collector:	Julianne Blake	**Latitude*:**	45°42'46.48"N	**Longitude*:**	121°26'1.84"W
Area of Project Site (acres):	9.42				

** near center of the project site*

What is the desired site condition or management objective(s) for this project site? Check all that apply (by using the drop-down menu).

X	Oak woodland & forest? (crowns of most oaks are within 2 crown-widths of each other)
	Oak savanna? (crowns of most oaks farther than 2 crown-widths of each other; canopy cover usually <10%)
	Other? (describe below)

Describe here:

External Data: List below the persons, agencies, and/or documents that provided location information on rare wildlife species, rare plants, and/or the boundaries of designated conservation priority areas. Also, note the recentness of the information (if known).

Skookum Resource Management, Washington Department of Fish and Wildlife Priority Habitats and Species Program, U.S. Fish and Wildlife Service Information for Planning and Consultation.

Project Site History: Based on conversation with land owner/manager and other information, describe below the years and extent (% of project site) of past and present management actions (e.g., vegetation control), natural disturbances (e.g., fire, insect infestations), and human-associated disturbances (e.g., timber harvest, grazing regimes). If possible, sketch a map showing where specific types of management have occurred.

On February 27, 2023, Skookum Resource Management (SRM) submitted a Forest Practices Consistency Determination (FPCD) to the U.S. Forest Service (USFS) on behalf of the landowners. SRM completed the Spitzer Forest Stewardship Plan (SRM 2023) to accompany the Forest Practices application, which was prepared to enhance onsite oak woodland habitat for fire resistance and improved wildlife conditions. The treatment map prepared by SRM is in Appendix A. The forest practices portion of the project will remove competing conifer trees and thin remaining conifers from below to reduce fuel loading, release oak canopy from competition, and improve WGS habitat as part of the approved forest practice. A gravel road that provides site access has already been constructed in the northeastern corner of the site and continues southerly to a landing to be used for the Forest Practice. The project has resulted in the removal of two Oregon white oak trees, for a total canopy impact of approximately 0.02 acres (670 sq. ft.), and ground disturbance in the road location.

FINAL SCORE TABLE

DO NOT ENTER DATA HERE

	Final Score*
OAK HABITAT QUALITY	**68.43%**

**indicates the percentage of optimum*

OAK HABITAT CALCULATOR

Name of Project Site:	Courtney Road	Date Assessed:	8/10/2025

MAIN INDICATORS TABLE

The majority of questions below contain drop-down menus in their respective answer box. Please select answer from the drop-down menus, when possible, instead of

Question #	Category	Maximum Weight in Oak Habitat Quality Final Score		Data Entry	Weights for Main Indicator	Weighted Data	Main Indicator Subscore	Main Indicator Name
Obtain answers in Office.								
1	**Does the project site contain: (a) at least 1 oak tree per acre, AND (b) the ground cover between the oaks is not mostly pavement, lawn, or row crops?** If yes, continue. If no, STOP -- this project site cannot be assessed using this Oak Habitat Calculator.							
2	**From aerial imagery, and confirmed by field observations if possible, what percent of the land within the project site contains each of the following:** Next to each, enter best estimate of the percent. Enter 0% if none. Enter 1% if barely present. Must sum to 100%.							
	Risk	0.50	Trees (any kind -- oak, other hardwoods,	55%	1.00	0.55		
			Shrubs/Chaparral	13%	0.10	0.01		
			Hayfield, Ryegrass, Grain field, Pasture (if		0.00	0.00		
			Other Grasslands mowed or grazed no	25%	0.05	0.01		
			Cropland, Orchard, Vineyard		0.00	0.00		
			Bare Areas, Water, Roads, Buildings,	7%	0.00	0.00		
			Other					
			SUM	100%			55.00%	LUsite
3	**From aerial imagery, what percent of the land within 0.5 mile of the center of the project site is occupied by:** Next to each, enter best estimate of the percent. Enter 0% if none. Enter 1% if barely present. Must sum to 100%.							
	Context	1.00	Trees (any kind -- oak, other hardwoods,	60%	1.00	0.60		
			Shrubs/Chaparral	10%	0.10	0.01		
			Hayfield, Ryegrass, Grain field, Pasture (if		0.00	0.00		
			Other Grasslands mowed or grazed no	25%	0.05	0.01		
			Cropland, Orchard, Vineyard		0.00	0.00		
			Bare Areas, Water, Roads, Buildings,	5%	0.00	0.00		
			Other					
			SUM	100%			60.00%	LU.5mi
4	**What is the area-weighted distance to other patches of oak?** Go to the Oak worksheet, find the applicable score in the Oak Table, and enter that number here.							
	Context	1.00		9			27.27%	DistOak
5	**Use the center of the project site to draw a circle with a 1-mile radius. Within that circle, do paved roads completely encircle the project site? *Note: To*** If yes, select 1. If no, select 0.							
	Risk	0.50		0			100.00%	Encirc
6	**What is the closest distance from the project site's oaks to areas likely to be sprayed for insect control, such as to orchards, vineyards, horticultural** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Risk	0.50	On-site or within 100 ft from project site		0	0.00		
			100-1000 ft from project site boundary		1	0.00		
			1001 ft - 1 mile from project site boundary		2	0.00		
			>1 mile from project site boundary	1	3	3.00	100.00%	Spray
7	**Is the project site within or nearly contiguous to a designated priority area for habitat conservation or restoration by a statewide or regionwide plan? (In** If yes, select 1. If no, select 0.							
	Context	1.00		1			100.00%	PrioArea
8	**Is a special-status animal species known to be present and reproducing on the project site or within 0.5 mile? (Contact the State Heritage Program, wildlife** Select, from the drop-down menu, the category that represents the total number of special-status animal species found on the project site. If there is no information							
	Species	1.00		1			50.00%	RareAnim
9	**Is a special-status plant species present within the project site? (Contact the State Heritage Program, Native Plant Society, and qualified local botanists. If** Select, from the drop-down menu, the category that represents the total number of special-status plant species found on the project site. If there is no information							
	Species	1.00		0			0.00%	RarePlant
Obtain answers from Project Site Visit.								
10	**Within the project site, what proportion of the hardwood trees 20 feet or taller are oak?** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Vegetation	0.33	<50%		0	0.00		
			50-75%	1	1	1.00		
			76-90%		2	0.00		
			>90%		3	0.00	33.33%	PctOak
11	**Does the project site contain all the oak species that are expected to occur in this geographic location and elevation? (Use the maps, found here:** If yes, select 1. If no, select 0.							
	Vegetation	0.33		1			100.00%	AllSpp
12	**Within the project site's oak forest, woodland, and savanna, what is the percent of shrub and vine cover (excluding chaparral)?** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Vegetation	0.33	None (or < 5 individual plants) -- **SKIP TO**		2	0.00		
			Trace to 50%	1	5	5.00		
			>50%		4	0.00	100.00%	SCov
13	**DO NOT ANSWER THIS QUESTION IF THE ANSWER TO QUESTION #12 WAS "NONE (OR <5 INDIVIDUAL PLANTS)." SKIP TO QUESTION #14.** **Within the project site's oak forest, woodland, and savanna, what proportion of the shrub and vine cover (excluding chaparral) is invasive species of shrubs** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Vegetation	1.00	None (or <5 individual plants)	1	6	6.00		
			Trace to 15%		5	0.00		
			16-30%		2	0.00		
			31-50%		1	0.00		
			>50%		0	0.00	100.00%	SInvas
14	**Within the project site's oak forest, woodland, and savanna, what proportion of the herbaceous vegetation (forbs & grasses) cover is invasive herb species?** Select only **one** choice. Enter "1" next to the most relevant choice.							

	Vegetation	1.50	None (or <5 individual plants)		6	0.00		
			Trace to 15%	1	5	5.00		
			16-30%		2	0.00		
			31-50%		1	0.00		
			>50%		0	0.00	83.33%	HInvas
15	**Within the project site's oak forest, woodland, and savanna, what proportion of the trees taller than 20 feet are conifers (excluding pine & juniper)?** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Vegetation	1.50	<5%		4	0.00		
			5-10%		3	0.00		
			11-25%		2	0.00		
			26-50%	1	1	1.00		
			>50%		0	0.00	25.00%	Conif
16	**To what degree has the soil on the project site been (or will be) disturbed beyond its natural state, such as disturbances caused by off-road vehicles,** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Risk	0.50	None, and unlikely		3	0.00		
			None obvious: can assume some		2	0.00		
			Moderate: a few localized trails are	1	1	1.00		
			Extensive: vehicle tracks, trampled		0	0.00	33.33%	GoodSoil
17	**When answering this question, take into account the entire parcel/property on which the project site is located, not just the project site itself. On what** Select an answer choice for **each** of the three practices below. If "necessary or desirable but not implemented (i.e.; 0% of the parcel/property)," select A. If							
	Practices	1.00	1) At least 80% of the large (>20"	D		1.00		
			2) Some other individual trees have been	C		0.50		
			3) **Mowing** is conducted before May 15 or	D		1.00	83.33%	BMPs
18	**Can fire be used* to help sustain this project site's oak habitat? *(*preceded by brush clearing and tree thinning, followed by manual reseeding with native*** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Practices	1.00	Yes, and was used in past 5 years		3	0.00		
			Yes, will be used in the future but not used		2	0.00		
			Not feasible here		0	0.00		
			Not applicable -- fire not needed to	1				FireFeas
19	**Will the project site's vegetation be monitored before and after management, according to a statistically-based sampling plan, and the results used to** If yes, select 1. If no, select 0. If no management necessary, select "no mgmt."							
	Practices	1.00		1			100.00%	AdaptMgt

COMPOSITE INDICATORS TABLE

Category	Maximum Weight in Oak Habitat Quality Final Score	Composite Indicator Description	Composite Indicator Subscore	Composite Indicator Name
Do not enter data below. Data will automatically transfer from the Main Indicators Table.				
Context	3	Landscape Context (AVERAGE(LU.5mi, DistOak, PrioArea))	62.42%	Lscape
Vegetation	3	Invasive species of vegetation (AVERAGE(Conif, SInvas, HInvas))	69.44%	Invas
Vegetation	1	Vegetation structure (AVERAGE(PctOak, AllSpp, SCov))	77.78%	Veg
Species	1	Sensitive/rare species (MAX(RareAnim, RarePlant))	50.00%	Spp
Practices	1	Management Practices (AVERAGE(BMPs, FireFeas, AdaptMgt))	91.67%	Mgt
Risk	2	Risks/stressors (AVERAGE(LUsite, Encirc, Spray, GoodSoil))	72.08%	Risk

OAK TABLE

DIRECTIONS:

1) Find the largest patch of contiguous* oak and native grassland that is at least partially located within the project site's boundaries. Determine the entire size of the patch (in acres). Then, in Column A, find the category in which the determined patch size fits. (For more information on determining the size of the largest patch, see the "Instructions for Using the Metric" section of the user's guide.

2) Determine the entire size (in acres) of the next closest oak and native grassland patch. Then, in Column B, find the category in which the determined patch size fits. This patch can be located anywhere, including completely off the project site.

3) Determine the distance between the two identified patches. Then, in Column C, find the category in which the determined distance fits.

4) Select the most applicable score, in either Column D or E, depending on whether the land between the two identified patches is mostly developed or undeveloped. <u>This score is the number entered into question #4 on the Calculator worksheet.</u>**

Column A	Column B	Column C	Column D	Column E
Size of Contiguous* Oak & Native Grassland Patch (in acres)	Size of Next Closest Oak & Native Grassland Patch (in acres)	Distance Between Patches	Score if Intervening is Mostly Undeveloped	Score if Intervening is Mostly Developed**
<10 ac	<10 acres	>1 mi	1	0
		0.6 - 1 mi	2	1
		150 ft - 0.5 mi	3	1
	10-25 acres	>1 mi	3	2
		0.6 - 1 mi	4	3
		150 ft - 0.5 mi	5	3
	26-50 acres	>1 mi	5	4
		0.6 - 1 mi	6	5
		150 ft - 0.5 mi	7	5
	>50 acres	>1 mi	7	6
		0.6 - 1 mi	8	7
		150 ft - 0.5 mi	9	7
10-25 acres	<10 acres	>1 mi	9	8
		0.6 - 1 mi	10	9
		150 ft - 0.5 mi	11	9
	10-25 acres	>1 mi	11	10
		0.6 - 1 mi	12	11
		150 ft - 0.5 mi	13	11
	26-50 acres	>1 mi	13	12
		0.6 - 1 mi	14	13
		150 ft - 0.5 mi	15	13
	>50 acres	>1 mi	15	14
		0.6 - 1 mi	16	15
		150 ft - 0.5 mi	17	15
26-50 acres	<10 acres	>1 mi	17	16
		0.6 - 1 mi	18	17
		150 ft - 0.5 mi	19	17
	10-25 acres	>1 mi	19	18
		0.6 - 1 mi	20	19
		150 ft - 0.5 mi	21	19
	26-50 acres	>1 mi	21	20
		0.6 - 1 mi	22	21
		150 ft - 0.5 mi	23	21
	>50 acres	>1 mi	23	22
		0.6 - 1 mi	24	23
		150 ft - 0.5 mi	25	23
>50 acres	<10 acres	>1 mi	25	24
		0.6 - 1 mi	26	25
		150 ft - 0.5 mi	27	25
	10-25 acres	>1 mi	27	26
		0.6 - 1 mi	28	27
		150 ft - 0.5 mi	29	27
	26-50 acres	>1 mi	29	28
		0.6 - 1 mi	30	29
		150 ft - 0.5 mi	31	29
	>50 acres	>1 mi	31	30
		0.6 - 1 mi	32	31
		150 ft - 0.5 mi	33	31

*contiguous = include in the acreage estimate on-site acreage as well as off-site acreage not separated by a road, river, field, or other linear open-land feature wider than 150 ft (because it would then qualify as the next closest patch)

**developed = mainly buildings, roads, lawns, other landscaped areas, impervious surfaces, and croplands

Oak Woodland Assessment: Post-Development

OAK HABITAT METRIC

Version 1.0

Name of Project Site:	Courtney Road	**Date Assessed:**	8/10/2025	**Elevation:**	1,600 feet
Data Collector:	Julianne Blake	**Latitude*:**	45°42'46.48"N	**Longitude*:**	121°26'1.84"W
Area of Project Site (acres):	9.42				

** near center of the project site*

What is the desired site condition or management objective(s) for this project site? Check all that apply (by using the drop-down menu).

X	Oak woodland & forest? (crowns of most oaks are within 2 crown-widths of each other)
	Oak savanna? (crowns of most oaks farther than 2 crown-widths of each other; canopy cover usually <10%)
	Other? (describe below)

Describe here:

External Data: List below the persons, agencies, and/or documents that provided location information on rare wildlife species, rare plants, and/or the boundaries of designated conservation priority areas. Also, note the recentness of the information (if known).

Skookum Resource Management, Washington Department of Fish and Wildlife Priority Habitats and Species Program, U.S. Fish and Wildlife Service Information for Planning and Consultation.

Project Site History: Based on conversation with land owner/manager and other information, describe below the years and extent (% of project site) of past and present management actions (e.g., vegetation control), natural disturbances (e.g., fire, insect infestations), and human-associated disturbances (e.g., timber harvest, grazing regimes). If possible, sketch a map showing where specific types of management have occurred.

On February 27, 2023, Skookum Resource Management (SRM) submitted a Forest Practices Consistency Determination (FPCD) to the U.S. Forest Service (USFS) on behalf of the landowners. SRM completed the Spitzer Forest Stewardship Plan (SRM 2023) to accompany the Forest Practices application, which was prepared to enhance onsite oak woodland habitat for fire resistance and improved wildlife conditions. The treatment map prepared by SRM is in Appendix A. The forest practices portion of the project will remove competing conifer trees and thin remaining conifers from below to reduce fuel loading, release oak canopy from competition, and improve WGS habitat as part of the approved forest practice. A gravel road that provides site access has already been constructed in the northeastern corner of the site and continues southerly to a landing to be used for the Forest Practice. The project has resulted in the removal of two Oregon white oak trees, for a total canopy impact of approximately 0.02 acres (670 sq. ft.), and ground disturbance in the road location.

FINAL SCORE TABLE

DO NOT ENTER DATA HERE

	Final Score*
OAK HABITAT QUALITY	**71.43%**

**indicates the percentage of optimum*

OAK HABITAT CALCULATOR

Name of Project Site:	Courtney Road	Date Assessed:	8/10/2025

MAIN INDICATORS TABLE

The majority of questions below contain drop-down menus in their respective answer box. Please select answer from the drop-down menus, when possible, instead of

Question #	Category	Maximum Weight in Oak Habitat Quality Final Score		Data Entry	Weights for Main Indicator	Weighted Data	Main Indicator Subscore	Main Indicator Name
Obtain answers in Office.								
1	**Does the project site contain: (a) at least 1 oak tree per acre, AND (b) the ground cover between the oaks is not mostly pavement, lawn, or row crops?** If yes, continue. If no, STOP -- this project site cannot be assessed using this Oak Habitat Calculator.							
2	**From aerial imagery, and confirmed by field observations if possible, what percent of the land within the project site contains each of the following:** Next to each, enter best estimate of the percent. Enter 0% if none. Enter 1% if barely present. Must sum to 100%.							
	Risk	0.50	Trees (any kind -- oak, other hardwoods,	50%	1.00	0.50		
			Shrubs/Chaparral	13%	0.10	0.01		
			Hayfield, Ryegrass, Grain field, Pasture (if		0.00	0.00		
			Other Grasslands mowed or grazed no		0.05	0.00		
			Cropland, Orchard, Vineyard	25%	0.00	0.00		
			Bare Areas, Water, Roads, Buildings,	12%	0.00	0.00		
			Other					
			SUM	100%			50.00%	LUsite
3	**From aerial imagery, what percent of the land within 0.5 mile of the center of the project site is occupied by:** Next to each, enter best estimate of the percent. Enter 0% if none. Enter 1% if barely present. Must sum to 100%.							
	Context	1.00	Trees (any kind -- oak, other hardwoods,	60%	1.00	0.60		
			Shrubs/Chaparral	10%	0.10	0.01		
			Hayfield, Ryegrass, Grain field, Pasture (if		0.00	0.00		
			Other Grasslands mowed or grazed no	20%	0.05	0.01		
			Cropland, Orchard, Vineyard	5%	0.00	0.00		
			Bare Areas, Water, Roads, Buildings,	5%	0.00	0.00		
			Other					
			SUM	100%			60.00%	LU.5mi
4	**What is the area-weighted distance to other patches of oak?** Go to the Oak worksheet, find the applicable score in the Oak Table, and enter that number here.							
	Context	1.00		9			27.27%	DistOak
5	**Use the center of the project site to draw a circle with a 1-mile radius. Within that circle, do paved roads completely encircle the project site? *Note: To*** If yes, select 1. If no, select 0.							
	Risk	0.50		0			100.00%	Encirc
6	**What is the closest distance from the project site's oaks to areas likely to be sprayed for insect control, such as to orchards, vineyards, horticultural** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Risk	0.50	On-site or within 100 ft from project site	1	0	0.00		
			100-1000 ft from project site boundary		1	0.00		
			1001 ft - 1 mile from project site boundary		2	0.00		
			>1 mile from project site boundary		3	0.00	0.00%	Spray
7	**Is the project site within or nearly contiguous to a designated priority area for habitat conservation or restoration by a statewide or regionwide plan? (In** If yes, select 1. If no, select 0.							
	Context	1.00		1			100.00%	PrioArea
8	**Is a special-status animal species known to be present and reproducing on the project site or within 0.5 mile? (Contact the State Heritage Program, wildlife** Select, from the drop-down menu, the category that represents the total number of special-status animal species found on the project site. If there is no information							
	Species	1.00		1			50.00%	RareAnim
9	**Is a special-status plant species present within the project site? (Contact the State Heritage Program, Native Plant Society, and qualified local botanists. If** Select, from the drop-down menu, the category that represents the total number of special-status plant species found on the project site. If there is no information							
	Species	1.00		0			0.00%	RarePlant
Obtain answers from Project Site Visit.								
10	**Within the project site, what proportion of the hardwood trees 20 feet or taller are oak?** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Vegetation	0.33	<50%		0	0.00		
			50-75%	1	1	1.00		
			76-90%		2	0.00		
			>90%		3	0.00	33.33%	PctOak
11	**Does the project site contain all the oak species that are expected to occur in this geographic location and elevation? (Use the maps, found here:** If yes, select 1. If no, select 0.							
	Vegetation	0.33		1			100.00%	AllSpp
12	**Within the project site's oak forest, woodland, and savanna, what is the percent of shrub and vine cover (excluding chaparral)?** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Vegetation	0.33	None (or < 5 individual plants) -- **SKIP TO**		2	0.00		
			Trace to 50%	1	5	5.00		
			>50%		4	0.00	100.00%	SCov
13	**DO NOT ANSWER THIS QUESTION IF THE ANSWER TO QUESTION #12 WAS "NONE (OR <5 INDIVIDUAL PLANTS)." SKIP TO QUESTION #14.** **Within the project site's oak forest, woodland, and savanna, what proportion of the shrub and vine cover (excluding chaparral) is invasive species of shrubs** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Vegetation	1.00	None (or <5 individual plants)	1	6	6.00		
			Trace to 15%		5	0.00		
			16-30%		2	0.00		
			31-50%		1	0.00		
			>50%		0	0.00	100.00%	SInvas
14	**Within the project site's oak forest, woodland, and savanna, what proportion of the herbaceous vegetation (forbs & grasses) cover is invasive herb species?** Select only **one** choice. Enter "1" next to the most relevant choice.							

	Vegetation	1.50	None (or <5 individual plants)		6	0.00		
			Trace to 15%	1	5	5.00		
			16-30%		2	0.00		
			31-50%		1	0.00		
			>50%		0	0.00	83.33%	HInvas
15	**Within the project site's oak forest, woodland, and savanna, what proportion of the trees taller than 20 feet are conifers (excluding pine & juniper)?** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Vegetation	1.50	<5%		4	0.00		
			5-10%	1	3	3.00		
			11-25%		2	0.00		
			26-50%		1	0.00		
			>50%		0	0.00	75.00%	Conif
16	**To what degree has the soil on the project site been (or will be) disturbed beyond its natural state, such as disturbances caused by off-road vehicles,** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Risk	0.50	None, and unlikely		3	0.00		
			None obvious: can assume some		2	0.00		
			Moderate: a few localized trails are		1	0.00		
			Extensive: vehicle tracks, trampled	1	0	0.00	0.00%	GoodSoil
17	**When answering this question, take into account the entire parcel/property on which the project site is located, not just the project site itself. On what** Select an answer choice for **each** of the three practices below. If "necessary or desirable but not implemented (i.e.; 0% of the parcel/property)," select A. If							
	Practices	1.00	1) At least 80% of the large (>20"	D		1.00		
			2) Some other individual trees have been	C		0.50		
			3) **Mowing** is conducted before May 15 or	D		1.00	83.33%	BMPs
18	**Can fire be used* to help sustain this project site's oak habitat? *(*preceded by brush clearing and tree thinning, followed by manual reseeding with native*** Select only **one** choice. Enter "1" next to the most relevant choice.							
	Practices	1.00	Yes, and was used in past 5 years		3	0.00		
			Yes, will be used in the future but not used		2	0.00		
			Not feasible here		0	0.00		
			Not applicable -- fire not needed to	1				FireFeas
19	**Will the project site's vegetation be monitored before and after management, according to a statistically-based sampling plan, and the results used to** If yes, select 1. If no, select 0. If no management necessary, select "no mgmt."							
	Practices	1.00		1			100.00%	AdaptMgt

COMPOSITE INDICATORS TABLE

Category	Maximum Weight in Oak Habitat Quality Final Score	Composite Indicator Description	Composite Indicator Subscore	Composite Indicator Name
Do not enter data below. Data will automatically transfer from the Main Indicators Table.				
Context	3	Landscape Context (AVERAGE(LU.5mi, DistOak, PrioArea))	62.42%	Lscape
Vegetation	3	Invasive species of vegetation (AVERAGE(Conif, SInvas, HInvas))	86.11%	Invas
Vegetation	1	Vegetation structure (AVERAGE(PctOak, AllSpp, SCov))	77.78%	Veg
Species	1	Sensitive/rare species (MAX(RareAnim, RarePlant))	50.00%	Spp
Practices	1	Management Practices (AVERAGE(BMPs, FireFeas, AdaptMgt))	91.67%	Mgt
Risk	2	Risks/stressors (AVERAGE(LUsite, Encirc, Spray, GoodSoil))	37.50%	Risk

OAK TABLE

DIRECTIONS:

1) Find the largest patch of contiguous* oak and native grassland that is at least partially located within the project site's boundaries. Determine the entire size of the patch (in acres). Then, in Column A, find the category in which the determined patch size fits. (For more information on determining the size of the largest patch, see the "Instructions for Using the Metric" section of the user's guide.

2) Determine the entire size (in acres) of the next closest oak and native grassland patch. Then, in Column B, find the category in which the determined patch size fits. This patch can be located anywhere, including completely off the project site.

3) Determine the distance between the two identified patches. Then, in Column C, find the category in which the determined distance fits.

4) Select the most applicable score, in either Column D or E, depending on whether the land between the two identified patches is mostly developed or undeveloped. <u>This score is the number entered into question #4 on the Calculator worksheet.</u>**

Column A	Column B	Column C	Column D	Column E
Size of Contiguous* Oak & Native Grassland Patch (in acres)	Size of Next Closest Oak & Native Grassland Patch (in acres)	Distance Between Patches	Score if Intervening is Mostly Undeveloped	Score if Intervening is Mostly Developed**
<10 ac	<10 acres	>1 mi	1	0
		0.6 - 1 mi	2	1
		150 ft - 0.5 mi	3	1
	10-25 acres	>1 mi	3	2
		0.6 - 1 mi	4	3
		150 ft - 0.5 mi	5	3
	26-50 acres	>1 mi	5	4
		0.6 - 1 mi	6	5
		150 ft - 0.5 mi	7	5
	>50 acres	>1 mi	7	6
		0.6 - 1 mi	8	7
		150 ft - 0.5 mi	9	7
10-25 acres	<10 acres	>1 mi	9	8
		0.6 - 1 mi	10	9
		150 ft - 0.5 mi	11	9
	10-25 acres	>1 mi	11	10
		0.6 - 1 mi	12	11
		150 ft - 0.5 mi	13	11
	26-50 acres	>1 mi	13	12
		0.6 - 1 mi	14	13
		150 ft - 0.5 mi	15	13
	>50 acres	>1 mi	15	14
		0.6 - 1 mi	16	15
		150 ft - 0.5 mi	17	15
26-50 acres	<10 acres	>1 mi	17	16
		0.6 - 1 mi	18	17
		150 ft - 0.5 mi	19	17
	10-25 acres	>1 mi	19	18
		0.6 - 1 mi	20	19
		150 ft - 0.5 mi	21	19
	26-50 acres	>1 mi	21	20
		0.6 - 1 mi	22	21
		150 ft - 0.5 mi	23	21
	>50 acres	>1 mi	23	22
		0.6 - 1 mi	24	23
		150 ft - 0.5 mi	25	23
>50 acres	<10 acres	>1 mi	25	24
		0.6 - 1 mi	26	25
		150 ft - 0.5 mi	27	25
	10-25 acres	>1 mi	27	26
		0.6 - 1 mi	28	27
		150 ft - 0.5 mi	29	27
	26-50 acres	>1 mi	29	28
		0.6 - 1 mi	30	29
		150 ft - 0.5 mi	31	29
	>50 acres	>1 mi	31	30
		0.6 - 1 mi	32	31
		150 ft - 0.5 mi	33	31

*contiguous = include in the acreage estimate on-site acreage as well as off-site acreage not separated by a road, river, field, or other linear open-land feature wider than 150 ft (because it would then qualify as the next closest patch)

**developed = mainly buildings, roads, lawns, other landscaped areas, impervious surfaces, and croplands

APPENDIX E

OAK MITIGATION CALCULATIONS

WDFW Oak Mitigation and Understory Enhancement

Mitigation for Physical Impacts

Dripline Impact	Mitigation Ratio[1]	Mitigation Area	Spacing	Oak Quantity[3]
0.02 acres (670 sq. ft.)	2:1	0.03 acres (1,340 sq. ft.)	87.12 sq. ft.[1,2]	16

[1]Nolan and Azerrad 2024. [2]Approximately 9-foot on-center. [3]Mitigation Area ÷ Spacing = Oak Quantity.

Mitigation for Temporal Impacts

Dripline Impact	Oak Woodland Functions[1]		Mitigation Ratio[1]	Mitigation Area
	Existing	Proposed		
0.02 acres (670 sq. ft.)	68.43% (Medium)	71.43% (Medium)	1:1	0.02 acres (670 sq. ft.)

[1]Nolan and Azerrad 2024. [2]Mitigation Area ÷ Spacing = Oak Quantity.

Mitigation Summary

Identifier	Impact Area	Impact Type	Mitigation Ratio[1]	Mitigation Area
Oak Canopy Removal	0.02 acres (670 sq. ft.)	Physical	2:1	0.03 acres (1,340 sq. ft.)
		Temporal	1:1	0.02 acres (670 sq. ft.)
			Total	**0.05 acres (2,010 sq. ft.)**

[1]Nolan and Azerrad 2024.

Recommended Oak Mitigation and Understory Enhancement

Recommended Mitigation Summary for Physical Impacts

Type	Total Area	Stock	Spacing	Quantity
Oaks	0.03 acres (1,340 sq. ft.)	One inch DBH	15-foot on-center[1]	6
Shrubs (Understory)		One gallon container	6-foot on-center	28

[1]Larger saplings have a higher likelihood of survival and shall be planted further apart to limit resource competition.

Planting Plan

Plant Specifications

Common Name	Scientific Name	Stock	Spacing[1,2]	Quantity[3]
Trees				
Oregon white oak	*Quercus garryana*	One inch DBH	15-foot on-center	6
Shrubs				
Nootka rose	*Rosa nutkana*	One gallon container	6-foot on-center	7
Snowberry	*Symphoricarpus albus*			7
Oceanspray	*Holodiscus discolor*			7
Red-flowering currant	*Ribes sanguineum*			7
			Total Shrubs[4]	**28**

[1]Nolan and Azerrad 2024. [2]Shrubs shall be planted a minimum of five feet away from oak plantings. [3]Quantity for physical mitigation only (quantity for physical and temporal mitigation). *[4]A planting calculator was used to determine shrub quantity utilizing 70 percent of the required mitigation area.*

Spitzer SMA Forest Practice

Klickitat County, Washington

Consistency Determination (CD-23-01-S)

Background

Skookum Resources Management has proposed a private Forest Practice on behalf of David Spitzer. The purpose of the Forest Practice is to enhance Oregon White Oak woodland habitat for improved wildfire resilience and wildlife conditions, including western gray squirrel which is present on the property. The proposed Forest Practice would take place within a Special Management Area, and must be reviewed for consistency with the Management Plan for the Columbia River Gorge National Scenic Area.

Decision

I find that the above proposal is consistent with the Management Plan for the Columbia River Gorge National Scenic Area (CRGNSA) if it is implemented as described in the application materials, the CRGNSA Consistency Determination and Findings of Fact referenced as CD-23-01-S, and provided the following conditions are applied:

1. Ground-based equipment shall only be used on established roads and temporary skid trails to limit soil disturbance.
2. Use of ground-based equipment shall be halted when the soil is saturated or if rutting >12 inches and puddling begin to occur.
3. At least 80% of disturbed areas shall be reseeded with appropriate ground cover species after the conclusion of the project. The proposed seed mix shall be reviewed by the CRGNSA Botanist prior to reseeding.
4. Areas to be retained as skips shall be approved by CRGNSA scenery experts prior to treatment activity.
5. The inadvertent discovery procedure described in the Management Plan shall be followed. In the event of discovery of cultural resources during construction, work in the immediate area of discovery shall be suspended until a cultural resource professional can evaluate the discovery.
6. WDFW biologists shall survey the site prior to project implementation to ensure protection of western gray squirrels. A 25 foot no-cut buffer shall be applied to any tree containing an active western gray squirrel nest.
7. If active western gray squirrel nests are found during project implementation, no construction activities shall occur between March 1st and August 31st within 400 feet of any squirrel nest to minimize disruption of reproductive gray squirrel behavior.
8. If presence of spotted owls or their nests are observed, no logging, thinning, or other heavy machinery activities shall take place between March 1st and July 15th.

Administrative Review (Appeal) Opportunities

A written request for review of the National Scenic Area Consistency Determination, with reasons to support the request, must be received within 20 days of the date shown with the Forest Supervisor signature below. Requests for review should be addressed to: Request for Review, Regional Forester, P.O. Box 3623, Portland, OR 97208. An electronic copy of the request should be provided to the USFS-CRGNSA Office at 902 Wasco Street, Suite 200, Hood River, Oregon 97031, ATTN Appeals, and/or emailed to appeals-pacificnorthwest-columbia-river-gorge-nsa@usda.gov.

Implementation Date

This project may begin immediately after the date on this decision. Project implementation must comply with the conditions of approval described above. The Consistency Determination expires two years after the date on this determination. If implementation has not commenced before that date, a new consistency review or request for extension shall be required.

DONNA MICKLEY Date
Forest Supervisor
Columbia River Gorge National Scenic Area

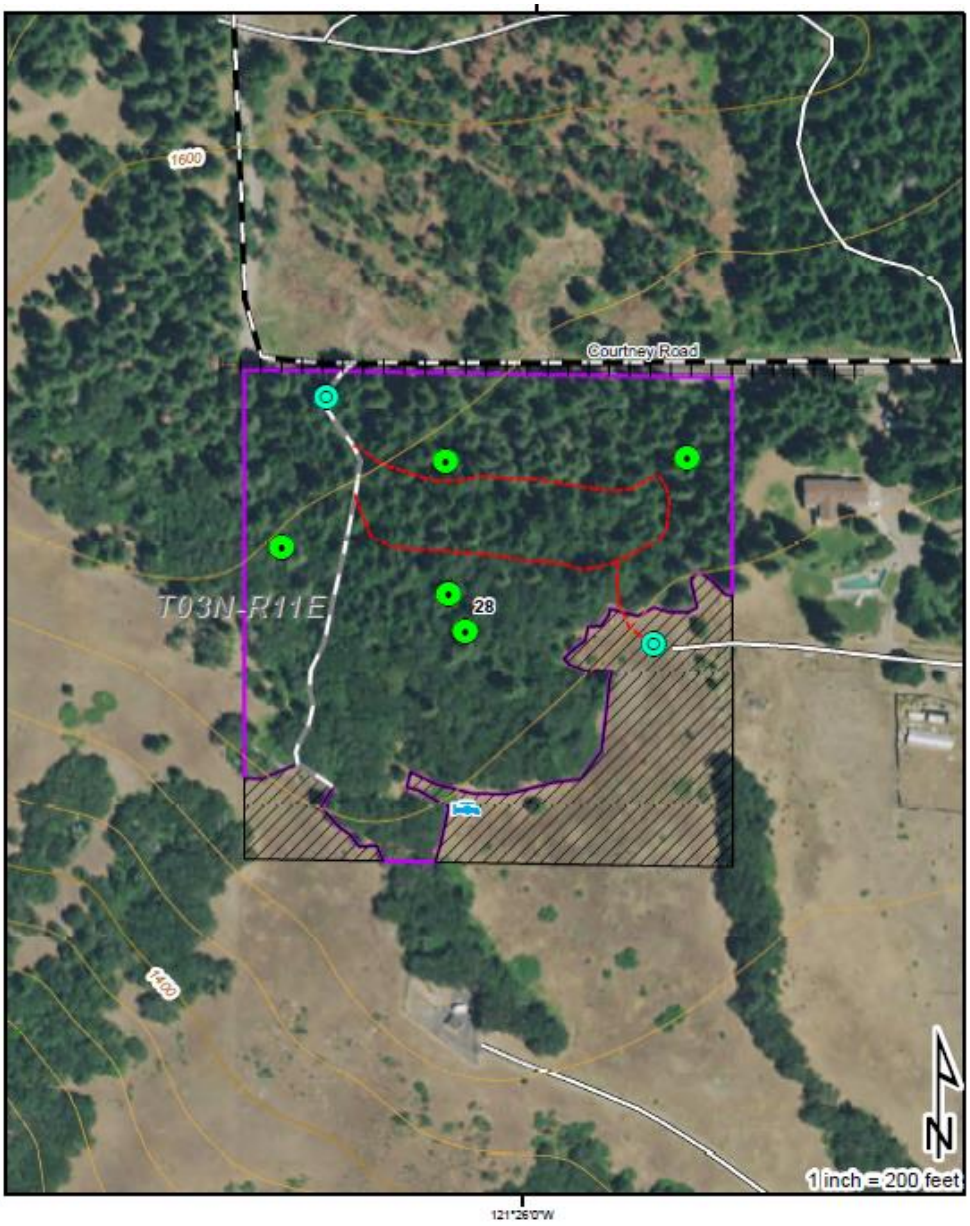
CRGNSA Consistency Determination Spitzer SMA Forest Practice, CD-23-01-S Parcel/Tax Lot # 03-11-2800-0028/00, Klickitat County, Washington

Findings of Fact

LANDOWNER:	**David Spitzer**
APPLICANT:	**Brian Beaulaurier, for Skookum Resource Management**
PROPOSED ACTION:	**Forest Practice within a Special Management Area**
LOCATION:	**T03N R11E S28, adjacent to Courtney Road**
NATIONAL SCENIC AREA DESIGNATION:	**Special Management Area**
LAND USE DESIGNATION:	**Agriculture**
LANDSCAPE SETTING:	**Oak-Pine Woodland**

The following findings of fact contain the applicable standards and guidelines from the CRGNSA Management Plan. The Management Plan, as adopted in 2020, is in effect. The CRGNSA Management Plan standards and guidelines are displayed in regular type. The findings are displayed in **bold type**.

Project Site Plan



Project: Spitzer Select
T03N R11E S28
Landowner: David Spitzer
9.42 acres - 2650' perimeter

Date: 2/27/2023

Well
WGS nests
Landings
Parcel
Treatment Area
Powerlines
Gravel-Rock, County-Primary
Gravel-Rock, Secondary
Dirt, County-Secondary
Closed Road
Skid corridors

Public Comment

A notice describing the project was sent to a mailing list of known interested parties and adjacent landowners on September 19, 2023. A period of 30 days was allowed for public comment. The following comments were received:

Comment: Steve McCoy, Staff Attorney for Friends of the Columbia Gorge, noted that several project activities are proposed that this decision cannot authorize within the allowable timeframe, which is two years unless extended to the maximum of three years.

Response: This decision will not authorize the applicants to conduct forest practices or other development activities that will occur beyond the allowable two-year timeframe set by the Management Plan, unless the applicants request an extension to the maximum timeframe of three years. Project activities such as assessment and potential treatment of brush and weed species, pre-commercial thinning and commercial harvest, and snag assessment and recruitment that does not occur within the decision timeline will require additional review under the Management Plan, where applicable.

Project Proposal

Proposed Forest Harvest Action

A modified version of the intermediate treatment commonly referred to as "free thinning" will be applied to the entire ownership. The applicant described free thinning as "the removal of trees to control stand density and favor desired crop trees using a combination of thinning criteria without strict regard to crown position." The modified method will favor special protection for all oak species, primarily Oregon white oak, in order to meet the SMA requirements. An oak dominate forest type is expected to be created. Conditions for harvest will include:

1) To protect the priority oak habitat, all conifers (not just merchantable) will be cut within a 30'-60' radius around the oaks greater than 15" dbh to promote release.
2) Remaining conifers will be thinned from below, to a 20'-25' spacing (70 – 109 trees per acre). This spacing will bring the forest closer to its traditional carrying capacity, while leaving the overstory mostly intact. In addition, fuel loading will be greatly reduced. Leave tree selection will favor larger, hardy, fire resistant Ponderosa Pine, and mature Douglas-fir to a lesser extent. Any conifers left behind will be limbed 6'-8' up the bole. Total volume to be harvested is approximately 15mbf-20mbf.
3) There are 5 Western Gray Squirrel nests located on the property. A no cut buffer with a radius of 25' will be installed around each nest tree.
4) Because the property is within the Ponderosa Pine/Oregon Oak vegetation type in the SMA of the CRGNSA, no leave trees are required; however, 5 snags at 10"-20" dbh and 3 snags greater than 20" are required to be retained. Because this requirement cannot be met, mitigation will consist of retaining 3 (three) trees per acre for future snag development.
5) Oregon white oak will not be cut, unless they are overstocked or present a hazard.

All harvest boundaries will be flagged with orange/white striped "special treatment zone" flagging. This intermediate treatment will allow for the selective removal of some conifer trees throughout the ownership regardless of crown position and return the stand to a more suitable forest condition. The result

will resemble a more realistic stand, which meets the historic range of variability. Conifers will remain the dominant species in portions of the overstory where oaks aren't currently present.

To reduce ladder fuels, most trees less than 8" dbh will be removed, with the exception of scattered skips that will be left behind to add diversity and to keep a multi-layered stand characteristic.

Harvesting will be accomplished with low impact ground-based equipment. Hand felling will be employed throughout the operation. Low impact ground-based skidding will deliver logs to identified landings. Machinery will use limbs from treatment as "walk ways" so as to not damage the root systems of adjacent trees. Additionally, the outer limbs on residual (leave tree) oaks will receive priority from felled tree directional falling, minimizing residual stand damage.

The intent of this intermediate treatment is to restore the previous oak forest habitat and provide a healthy, fire safe forest. This treatment remains a critical first step in ensuring the continued healthy growth of the residual stand. Overstocking has created an imbalanced stand prone to increased mortality and catastrophic loss from increased wildfire risk. Further long-term goals will focus on 1) the management of invasive species post-harvest and 2) management of in-growth secondary crown level species.

Current mortality rates may not generate the desired snag recruitment identified within the SMA. In addition, the current average stand diameters of snags are well below the 20" dbh requirement. We intend to identify and leave larger defective overstory Douglas-fir throughout the stand in hopes of creating future snags which will eventually meet the SMA requirement. Existing snags will be left it they do not present a hazard. A handful of snags may be created through girdling; in these instances, a large blue painted "G" at dbh will be present. Large, downed wood will be left scattered though out the treatment area.

Road and Landing Construction

Road construction will be limited to small spur roads leading to landings with ground-based tractor skid trails. Small amounts of soil disturbance are expected. Soil grading will not exceed 12 inches in depth on the remaining (~20%) secondary roads. No existing or proposed rock pit development will occur within the ownership boundary.

No rock or aggregate sources will be used from within the ownership to protect road surfaces. Imported rock material will come from an outside (not within the ownership) source if necessary to reduce soil disturbance in problematic road areas. Two landings are proposed with short haul roads and skid trails within the ownership. These sites will be reconstructed on existing (past harvesting activities) structures where appropriate to reduce resource impacts.

Anticipated Understory and Down Debris

Post mechanical thinning, residual understory would range 40-90 trees per acre (TPA) less than 12 in. DBH. Shrubs, forbs, and grasses should increase due to a more open canopy. Where needed, disturbed portions of the understory will be reseeded with native grasses/forbs in order to stabilize soils, protect the soil resource and/or reduce the invasion of non-native species.

Down logs will be retained at 1-3 pieces greater than 20" dbh when present. Soften down material will be left in place. Downed wood requirements will be met with current material on site in areas where high levels of biomass are found. Down woody material will be retained from residual harvest materials in areas lacking sufficient biomass to meet the SMA requirements.

Slash disposal will consist of two primary methods:

1) Chipped and Scatter: Residual material will be cut into small pieces, chipped and scatter to a depth of 18" or less. Ideally, cutting will occur during the spring or summer. This will provide for more breakdown time of slash prior to the following years fire season. Scattered material will be well distributed into low density components of the ownership where existing surface fuel loads or ladder fuels are light, decomposition is rapid, soils are exposed and where a potential short-term increase in fire hazard is acceptable. Average down wood post-harvest will meet the requirement of 1-3 pieces greater than 20" dbh.
2) Slash Piles: Where appropriate cut material will be hand or mechanically piled post thinning operation into predetermined locations. Piles will then be burned during the appropriate time under approved burn day conditions. A majority of the slash will be disposed of in this manner for reduced fuel loading and fire hazard. Residual burn pile locations will be re-seeded with a standardized native seed mix.

Reforestation is not a requirement for this plan as minimum stocking standards per acre will be met post-harvest. However, in areas where soil disturbance has occurred a standardized native seed mix will be distributed.

Land Use Designation

The Management Plan for the Columbia River Gorge National Scenic Area, Part II, Chapter 1, Agricultural Land, SMA Guideline 1.B states that "Forest uses and practices, as allowed for in Part II, Chapter 2: Forest Land" are allowable on lands designated SMA Agriculture, subject to review for compliance with the scenic, cultural, natural, and recreation resource guidelines, and the minimization of loss of land suitable for the production of agricultural crops or livestock. Part II, Chapter 2: Forest Land, SMA Guideline 1.X allows forest practices, subject to review for compliance with the scenic, cultural, natural, and recreation resource guidelines, and the minimization of loss of land suitable for the production of forest products.

Finding: The subject parcel is designated SMA Agriculture, and for the purposes of this review is therefore considered suitable for the production of agricultural crops or livestock. Similarly, the growth of the forest on this parcel indicates its suitability for the production of forest products. Because the land will not be committed to other uses following the forest practice, and proposed spur roads will be restored following the forest practice, there is no associated loss of land from the forest practice. As such, the forest practice minimizes the loss the land for the production of agricultural and forest products.

Guideline 1.X also includes the following as application requirements for forest practices:

> X. Forest practices in accordance with an approved forest practices application (see application requirements) and subject to the additional guidelines in this chapter.
>
> > (1) The following information, in addition to general site plan requirements (see Part II, Chapter 7: General Policies and Guidelines) shall be required:
> >
> > > (a) Delineate the following on a recent aerial photo or detailed map:

(i) The size, shape, and exact location of the proposed treatment area including any clumps of leave trees to remain. If more than one silvicultural prescription is to be used, code each on the photo.

(ii) Other important natural features of the subject parcel such as steep areas, streams, wetlands, rock outcrops, etc.

(iii) Road and structure construction or reconstruction location.

(iv) Location of proposed rock or aggregate sources.

(v) Major skid trails, landings, and yarding corridors.

(vi) Commercial firewood cutting areas.

(vii) Protection measures for scenic, cultural, natural, and recreation resources, such as road closures.

(b) Describe the existing forest in terms of species, ages, sizes, landscape pattern (including how it fits into the surrounding landscape pattern) and canopy closure for all canopy layers.

(c) Describe how the forest practice will fit into the existing landscape pattern and how it will meet scenic and natural resource standards in Review Uses 1.X(4)(a-g) and1.X(5)(a-d).

(d) Written silvicultural prescriptions with projected post-treatment forest condition specified in terms of species, ages, sizes, landscape pattern (including how it fits into the surrounding landscape pattern) and canopy closure for all canopy layers.

(e) Road and structure construction or reconstruction design.

(f) Existing and proposed rock pit development plans.

(g) A discussion of slash disposal methods.

(h) A reforestation plan as reviewed by the appropriate state forest practices agency.

Finding: The applicant submitted an application that meets these criteria.

Prior to this application, the landowner constructed a gravel access road on the property without authorization from the Forest Service or the Columbia River Gorge Commission. The access road is located generally on the western side of the property, connecting from Courtney Road to the southwest corner of the property. The forest practice application notes that the road exists within the treatment area ("Gravel-Rock, Secondary" in the site map key), but does not identify that it was constructed without a permit.

In an email dated September 6, 2024, the applicant stated that the road will not be used for the forest practice; instead, a landing will be located on the portion of the property that was developed as part of the Courtney Road realignment project, in addition to the other landing in the SE portion of the property accessed through a neighboring property.

Additional skid trails leading to the identified landing in the NW portion of the property are authorized. This Consistency Determination does not review or authorize the gravel road in part or as a whole and does not authorize any use of the gravel road after the conclusion of the forest practice.

The stewardship plan in the applicant's materials stated that "Down material within 300 feet (horizontal distance) from the main residence and all outbuildings will be removed for fire hazard reduction." No residences or outbuildings currently exist on the subject parcel, and this Consistency Determination does not contemplate or authorize new buildings. The Management Plan prohibits residential development on parcels less than 40 acres in size within Special Management Areas. Management Plan Part II, Chapter 2 – Forest Land, SMA Policy 9 at 171. This Consistency Determination does not authorize a 300-foot buffer around any portion of the project area where down material can be removed. That sentence from the stewardship plan was not copied into the project proposal section of this Consistency Determination.

(2) As part of the application, flag, stake or mark buffers, any trees or downed wood to be retained or removed (whichever makes the most sense), and areas for placing fill or removing material in preparation for a field visit by the reviewer.

Finding: This guideline is met.

(3) Stewardship Plan Requirements: The following information, in addition to the applicable portions of the forest practice application requirements above and general site plan requirements (see Part II, Chapter 7: General Policies and Guidelines) shall be provided:

> (a) Outline the long-term goals, proposed operations, and future sustainability of the subject parcel.
>
> (b) Describe the time frame and steps planned to reach the long-term goals.
>
> (c) For Forest Practices, describe how the proposed activities fit into the long-term goals and sustainability of the parcel and forest health. The following shall be addressed:
>
> > (i) Describe the range of natural conditions expected in the forest in terms of tree species, structure, and landscape pattern.

(ii) Describe what the resulting tree species, structure, and landscape pattern will be after the proposed activities.

(iii) Give a clear explanation of how a deviation from the applicable guidelines may better achieve forest health objectives.

(iv) Give a clear explanation of how and why the proposed activities will move the forest towards its range of natural variability and result in reaching sustainability, resiliency to disturbances.

(d) For clearing trees for new agricultural use, the following shall be addressed in addition to X(3)(a) and (b)above:

(i) Submit NRCS soil unit description and map for each soil unit affected by the proposed clearing or treatment.

(ii) Based on the needs of the operation, give a clear explanation as to the exact size of the clearing needed and how it will meet the natural and scenic requirements set forth in W(4)(a-d) in this chapter.

(iii) Describe in sufficient detail for evaluation the proposed agricultural use, the improvements needed on the parcel, timeline for its establishment, and its marketability.

(iv) Show evidence that an agricultural specialist, such as the county extension agent, has examined and found the proposed agricultural use reasonable and viable.

Finding: The applicant submitted a stewardship plan that meets these criteria. Staff notes that the applicant submitted a NRCS soil unit description map which is required when clearing trees for new agricultural use, but no agricultural use is being considered in this application.

(4) For forest practices, the following scenic resource guidelines shall apply: (See Scenic Resources section)

(5) Forest practices shall maintain the following in addition to applicable natural resources guidelines in Part I, Chapter 4, SMA Natural Resources: (See Natural Resources section)

Finding: Guidelines 4 and 5 are addressed in the applicable resource section below. The proposed forest practice is an allowed use in the SMA Agriculture Land Use Designation, subject to review for compliance with the scenic, cultural, natural, and recreation resource guidelines.

Scenery

SMA Design Guidelines Based on Landscape Settings

Finding: The site is within the Oak-Pine Woodland Landscape Setting.

1. The following guidelines apply to all lands within SMA landscape settings regardless of visibility from KVAs (includes areas visible from KVAs as well as areas not visible from KVAs):

B. Coniferous Woodland and Oak-Pine Woodland: Woodland areas shall retain the overall appearance of a woodland landscape. New development and land uses shall retain the overall visual character of the natural appearance of the Coniferous Woodland and Oak-Pine Woodland landscape.

(1) Buildings designed to have a vertical overall appearance in the Coniferous Woodland landscape setting and a horizontal overall appearance in the Oak-Pine Woodland landscape setting shall be encouraged.

(2) Use of plant species native to the landscape setting. Examples of native species are identified in the Scenic Implementation Handbook as appropriate to the area shall be encouraged. Where non-native plants are used, they shall have native-appearing characteristics.

Finding: The proposed 7.7 acre forest practice is within the Oak-Pine Woodland Landscape Setting and does not include structural development. Only native plant species will be used in reforestation.

Historically, this setting was dominated by oak and pine species associated with the ecosystems of the transition zone between fir forests of the western Gorge and semi-arid grasslands of the eastern Gorge. In the eastern portion of this setting as well as dry and south-facing slopes, Ponderosa Pine and Oregon White Oak are common. Douglas-fir occurs in increasing amounts on north-facing slopes and at higher elevations.

Site visits reveal the project area consists of Douglas-fir of varying ages dominating the site, with scattered Ponderosa Pine throughout. Oregon White Oak occurs across the southern ¾ of the project area among Douglas-fir and Ponderosa pine stands. An oak stand spans the southern boundary of the site with a few scattered Ponderosa pine throughout. Canopy closure for the site ranges from 70-90%.

The proposed forest practice retains oak trees and encourages oak tree health by removing firs within a 30-60' radius of mature oak trees (oaks >15" dbh). Remaining areas in the forest practice area will be free-thinned to a tree spacing of 20-25', retaining large Ponderosa Pine and mature Douglas-fir and removal from below of smaller diameter conifers. This particular parcel typifies the variability common to this landscape setting. Southern portions of the site support more broad-canopied oak woodland. Further north on the parcel, oak and pine dominant areas transition into stands where Douglas-fir occur more frequently.

According to the CRGNSA Management Plan's Desired Forest Structure and Pattern Table, East Conifer Vegetation Type shall maintain 40-80% canopy closure, and areas created with less than 40% cover shall not exceed 1 acre in size. Given that most tree removal will be of smaller diameter conifer and/or dense stands, anticipated loss to canopy closure is minimal and does not approach the 1 acre size restriction. Remaining trees will

rebound, returning canopy closure to percentages between 40-80% as required by the Desired Forest Structure and Pattern Table.

The proposed forest practice will retain and restore scenic Oak-Pine Woodland Landscape Setting characteristics and this guideline is met.

SMA Guidelines for Development and Uses Visible from KVAs

1. The guidelines in this section shall apply to proposed development on sites topographically visible from key viewing areas.

Finding: The landscape is topographically visible from the following Key Viewing Areas:

KVA	FOREGROUND	MIDDLEGROUND	BACKGROUND
HCRH		X	
I-84		X	
Columbia River		X	

2. New development and land uses shall be evaluated to ensure that the required scenic standard is met and that scenic resources are not adversely affected, including cumulative effects, based on the degree of visibility from key viewing areas.

Finding: Visibility of this forest practice area from KVAs at middleground distances (0.5-4 miles) is limited due to topography. The parcel sits on a small terrace at the top of a steep slope. Slash piles placed in open areas are small and temporary, so at this distance and angle, KVA visibility will relate to canopy density, contrast from this project area and adjacent parcels that have not been thinned, and created openings.

The applicant addresses canopy coverage by prioritizing oak release to a radius of up to 60' and mature conifer retention to a 20-25' spacing. As addressed above, created openings are not anticipated. These methods provide sufficient existing canopy coverage to avoid adverse effects to scenic resources.

The applicant plans to integrate "scattered skips that will be left behind to add diversity and to keep a multi-layered stand characteristic." As a condition of approval, areas to be retained as skips shall be approved by USFS scenery experts prior to treatment activity. Specifically, skips along the west project boundary soften treatment area edges so they blend into the overall landscape and avoid vegetation structure changes along property lines.

With this condition, there are no adverse effects to scenic resources and, therefore, no cumulative effects. This guideline is met.

3. The required SMA scenic standards for all development and uses are summarized in the following table:

LANDSCAPE SETTING	LAND USE DESIGNATION	SCENIC STANDARD
Coniferous Woodland, Oak-Pine Woodland	Forest (National Forest Lands), Open Space	Not Visually Evident
River Bottomlands	Open Space	Not Visually Evident
Gorge Walls, Canyonlands, Wildlands	Forest, Agriculture, Public Recreation, Open Space	Not Visually Evident
Coniferous Woodland, Oak-Pine Woodland	**Forest, Agriculture, Residential, Public Recreation**	**Visually Subordinate**
Residential	Residential	Visually Subordinate
Pastoral	Forest, Agriculture, Public Recreation, Open Space	Visually Subordinate
River Bottomlands	Forest, Agriculture, Public Recreation	Visually Subordinate

Finding: Because the development is in the Oak-Pine Woodland Landscape Setting and is designated Agriculture, the scenic standard is Visually Subordinate. The Management Plan defines Visually Subordinate as:

One of the two scenic standards applicable within the National Scenic Area. A description of the relative visibility of a development, structure or use that provides for developments, structures or uses that are not visually noticeable to the casual visitor and the defining landscape setting characteristics appear intact. Deviations may be present but must repeat form, line, color, texture and pattern common to the natural landscape setting so completely and at such scale, proportion intensity, direction, pattern, etc., that it not be noticeable.

With the above condition integrating skips specifically along property boundaries, the treatment area edges will appear visually subordinate to the natural appearance of the landscape setting. This guideline is met.

4. In all landscape settings, scenic standards shall be met by blending new development with the adjacent natural landscape elements rather than with existing development.

Finding: Not applicable. This project proposes no new development.

5. Proposed development or land uses shall be sited to achieve the applicable scenic standard. Development shall be designed to fit the natural topography, to take advantage of landform and vegetation screening, and to minimize visible grading or other modifications of landforms, vegetation cover, and natural characteristics. When screening of development is needed to meet the scenic standard from key viewing areas, use of existing topography and vegetation shall be given priority over other means of achieving the scenic standard such as planting new vegetation or using artificial berms.

Finding: Findings and conditions above outline how this land use, as sited, will meet scenic standards. This guideline is met.

6. The extent and type of conditions applied to a proposed development or use to achieve the scenic standard shall be proportionate to its degree of visibility from key viewing areas.

A. Decisions shall include written findings addressing the factors influencing the degree of visibility, including but not limited to:

(1) The amount of area of the building site exposed to key viewing areas,

(2) The degree of existing vegetation providing screening,

(3) The distance from the building site to the key viewing areas from which it is visible,

(4) The number of key viewing areas from which it is visible, and

(5) The linear distance along the key viewing areas from which the building site is visible (for linear key viewing areas, such as roads).

B. Conditions may be applied to various elements of proposed developments to ensure they meet the scenic standard for their setting as visible from key viewing areas, including but not limited to:

(1) Siting (location of development on the subject property, building orientation, and other elements),

(2) Retention of existing vegetation,

(3) Design (form, line, color, texture, reflectivity, size, shape, height, architectural and design details, and other elements), and

(4) New landscaping.

Finding: Findings and conditions in this section outline how this land use will meet scenic standards. This guideline is met.

7. Sites approved for new development to achieve scenic standards shall be consistent with guidelines to protect wetlands, riparian corridors, sensitive plant or wildlife sites and the buffer zones of each of these natural resources, and guidelines to protect cultural resources.

Finding: Not applicable. This project proposes no new development.

8. Proposed development shall not protrude above the line of a bluff, cliff, or skyline as visible from key viewing areas.

Finding: Not applicable. This project proposes no new development.

9. Structure height shall remain below the average tree canopy height of the natural vegetation adjacent to the structure, except if it has been demonstrated that meeting this guideline is not feasible considering the function of the structure.

Finding: Not applicable. This project proposes no new development.

10. The following guidelines shall apply to new landscaping used to screen development from key viewing areas:

A. New landscaping (including new earth berms) to achieve the required scenic standard from key viewing areas shall be required only when application of all other available guidelines in this

chapter is not sufficient to make the development meet the scenic standard from key viewing areas. Development shall be sited to avoid the need for new landscaping wherever possible.

B. If new landscaping is necessary to meet the required standard, existing on-site vegetative screening and other visibility factors shall be analyzed to determine the extent of new landscaping, and the size of new trees needed to achieve the standard. Any vegetation planted pursuant to this guideline shall be sized to provide sufficient screening to meet the scenic standard within five years or less from the commencement of construction.

C. Landscaping shall be installed as soon as practicable, and prior to project completion. Applicants and successors in interest for the subject parcel are responsible for the proper maintenance and survival of planted vegetation, and replacement of such vegetation that does not survive.

D. The Scenic Resources Implementation Handbook shall include recommended species for each landscape setting consistent with the Landscape Settings Design Guidelines in this chapter, and minimum recommended sizes of new trees planted (based on average growth rates expected for recommended species).

Finding: Not applicable. This project proposes no new development.

11. Unless expressly exempted by other provisions in this chapter, colors of structures on sites visible from key viewing areas shall be dark earth-tones found at the specific site or the surrounding landscape. The specific colors or list of acceptable colors shall be included as a condition of approval. The Scenic Resources Implementation Handbook shall include a recommended palette of colors as dark, or darker than the colors in the shadows of the natural features surrounding each landscape setting.

Finding: Not applicable. This project proposes no new structures.

12. The exterior of structures on lands seen from key viewing areas shall be composed of non-reflective materials or materials with low reflectivity. Continuous surfaces of glass shall be limited to ensure meeting the scenic standard. The Scenic Resources Implementation Handbook includes a list of recommended exterior materials and screening methods.

Finding: Not applicable. This project proposes no new structures.

13. Any exterior lighting shall be sited, limited in intensity, and shielded or hooded in a manner that prevents lights from being highly visible from key viewing areas and from noticeably contrasting with the surrounding landscape setting, except for road lighting necessary for safety purposes.

Finding: Not applicable. This project proposes no lighting.

14. Seasonal lighting displays may be permitted on a temporary basis, not to exceed 3 months.

Finding: Not applicable. This project proposes no new lighting displays.

15. New buildings shall be compatible with the general scale of existing nearby development. Expansion of existing development shall comply with this guideline to the maximum extent practicable. New buildings that are 1,500 square feet or less are exempt from this guideline. Findings addressing this guideline shall include but are not limited to:

A. Application of the landscape setting design guidelines, if applicable.

B. A defined study area surrounding the development that includes at least ten existing buildings, not including existing buildings within urban areas or outside the National Scenic Area.

C. Individual evaluations of scale for each separate proposed building in the application and each separate building in the study area, including:

(1) All finished above ground square footage;

(2) Total area of covered decks and porches;

(3) Attached garages

(4) Daylight basements

(5) Breezeways, if the breezeway shares a wall with an adjacent building

(6) Dimensions, based on information from the application or on Assessor's records D. An overall evaluation demonstrating the proposed development's compatibility with surrounding development. Buildings in the vicinity of the proposed development that are significantly larger in size than the rest of the buildings in the study area should be removed from this evaluation.

Finding: Not applicable. This project proposes no new buildings.

SMA Guidelines for KVA Foregrounds and Scenic Routes

Finding: This project is not within a KVA Foreground or Scenic Routes.

SMA Guidelines for Areas Not Visible from KVAs

1. Unless expressly exempted by other provisions in this chapter, colors of structures on sites not visible from key viewing areas shall be dark earth-tones found at the specific site. The specific colors or list of acceptable colors shall be approved as a condition of approval, drawing from the recommended palette of colors included in the Scenic Resources Implementation Handbook.

Finding: Not applicable. This project proposes no new structures.

2. New buildings shall be compatible with the general scale of existing nearby development. Expansion of existing development shall comply with this guideline to the maximum extent practicable. New buildings that are 1,500 square feet or less are exempt from this guideline. Findings addressing this guideline shall include but are not limited to:

A. Application of the landscape setting design guidelines, if applicable.

B. A defined study area surrounding the development that includes at least ten existing buildings, not including existing buildings within urban areas or outside the National Scenic Area.

C. Individual evaluations of scale for each separate proposed building in the application and each separate building in the study area, including:

(1) All finished above ground square footage;

(2) Total area of covered decks and porches;

(3) Attached garages

(4) Daylight basements

(5) Breezeways, if the breezeway shares a wall with an adjacent building

(6) Dimensions, based on information from the application or on Assessor's records

D. An overall evaluation demonstrating the proposed development's compatibility with surrounding development. Buildings in the vicinity of the proposed development that are significantly larger in size than the rest of the buildings in the study area should be removed from this evaluation.

Finding: Not applicable. This project proposes no new buildings.

SMA Forest Practice Guidelines for Scenic Resources

(4) For forest practices, the following scenic resource guidelines shall apply:

(a) Forest practices shall meet the design guidelines and scenic standards for the applicable landscape setting and zone (See Required SMA Scenic Standards table, SMA Guidelines for Development Visible from KVAs, SMA Scenic Resource Provisions, Part I, Chapter I).

Finding: Findings and conditions in this section outline how this forest practice will meet scenic standards. This condition is met.

(b) In the western portion (to White Salmon River) of the SMA Coniferous Woodland Landscape Setting, no more than 8% of the composite KVA viewshed from which the forest practice is topographically visible shall be in created forest openings at one time. The viewshed boundaries shall be delineated by the Forest Service.

Finding: Not applicable. Project is sited east of the White Salmon River.

(c) In the western portion (to the White Salmon River) of the SMA Gorge Walls, Canyonlands, and Wildlands Landscape Setting, no more than 4% of the composite KVA viewshed from which the forest practice is topographically visible shall be in created forest openings at one time. The viewshed boundaries shall be delineated by the Forest Service.

Finding: Not applicable. Project is sited east of the White Salmon River.

(d) For all other landscape settings, created forest openings visible at one time shall be within the desired range for the vegetation type as set forth in Natural Resources guidelines in Review Uses 1.X(5)(a)- (c) in this chapter.

Finding: The proposed forest practice retains larger oak trees by removing firs within a 30-60' radius of these oak trees. Additionally, forest practice areas will be free-thinned to a tree spacing of 20-25', prioritizing large Ponderosa Pine and mature Douglas-fir by removal from below of smaller diameter conifers. No created openings are anticipated given the current condition and these proposed treatments. This standard is met.

(e) Size, shape, and dispersal of created forest openings shall maintain the desired natural patterns in the landscape as set forth in Natural Resources guidelines in Review Uses 1.X(5)(a)- (c) in this chapter.

Finding: See Natural Resource section for guidelines consistent with this resource protection.

(f) The maximum size of any created forest opening is set forth by the "Desired" vegetation type in the Forest Structure and Pattern Table.

(i) If the treatment is proposed to go beyond the above guideline based on forest health or ecosystem function requirements, a Stewardship Plan shall be required.

(ii) If the Stewardship Plan proves that the above guideline is detrimental to either forest health or ecosystem function, the size of the created forest opening shall be within the natural range for the vegetation type as listed in the Desired Forest Structure and Pattern Table for each vegetation type, shall not mimic catastrophic fires, and shall maintain scenic standards.

Finding: No created openings are anticipated given the current condition and proposed forest practice. This standard is met.

(g) Created forest openings shall not create a break or opening in the vegetation in the skyline as viewed from KVAs.

Finding: No created openings are anticipated given the current condition and proposed forest practice. This standard is met.

Cultural

SMA Guidelines

1. All cultural resource surveys, evaluations, assessments, and mitigation plans shall be performed by professionals whose expertise reflects the type of cultural resources that are involved. Principal investigators shall meet the professional standards published in 36 CFR 61.

2. For federal or federally assisted undertakings, the reviewing agency shall complete its consultation responsibilities under Section 106 of the Historic Preservation Act of 1966 [36 CFR 800.2].

3. Discovery during construction: All authorizations for new developments or land uses shall require the immediate notification of the reviewing agency if cultural resources are discovered during construction or development. If cultural resources are discovered, particularly human bone or burials, work in the immediate area of discovery shall be suspended until a cultural resource professional can evaluate the potential significance of the discovery and recommend measures to protect and if possible recover the resource. If the discovered material is suspected to be human bone or a burial, the following procedures shall be used:

> A. The applicant shall stop all work in the vicinity of the discovery.
>
> B. The applicant shall immediately notify the Forest Service, the applicant's cultural resource professional, the county coroner, and appropriate law enforcement agencies.
>
> C. The Forest Service shall notify the tribal governments if the discovery is determined to be an Indian burial or a cultural resource.

4. Reviewing agencies shall use the […] steps under 36 CFR 800.4 for assessing potential effects to cultural resources and 36 CFR 800.5 for assessing adverse effects to cultural resources. [The Management Plan includes descriptions of these steps. They have been removed from this document.]

5. Determination of potential effects to significant cultural resources shall include consideration of cumulative effects of proposed developments that are subject to any of the following: 1) a reconnaissance or historic survey; 2) a determination of significance; 3) an assessment of effect; or 4) a mitigation plan.

Finding: CRGNSA Heritage Resources staff determined that a cultural resource survey was necessary for the proposed forest practice. The survey report was sent to DAHP and the Tribes on July 25, 2024. The 30-day review period ended on August 24, 2024. No responses were received. CRGNSA Heritage Resources staff determined that no historic properties would be affected (36 CFR 800.4 (d)(1)) by the proposed forest practice.

A condition of approval shall require that the inadvertent discovery procedure described above is followed in the event that cultural resources are discovered during construction.

Natural Resources

SMA Guidelines: Water Resources / Wildlife and Plants

1. All new development and uses, as described in a site plan prepared by the applicant, shall be evaluated using the following guidelines to ensure that natural resources are protected from adverse effects. Cumulative effects analysis is not required for expedited review uses or development. Comments from state and federal agencies shall be carefully considered. (Site plans are described under "Review Uses" in Part II, Chapter 7: General Policies and Guidelines.)

2. Water Resources (Wetlands, Streams, Ponds, Lakes, and Riparian Areas)

A. All Water Resources shall, in part, be protected by establishing undisturbed buffer zones as specified in 2.A.(2)(a) and 2(b) below. These buffer zones are measured horizontally from a wetland, stream, lake, or pond boundary as defined below.

(1) All buffer zones shall be retained undisturbed and in their natural condition, except as permitted with a mitigation plan.

(2) Buffer zones shall be measured outward from the bank full flow boundary for streams, the high-water mark for ponds and lakes, the normal pool elevation for the Columbia River, and the wetland delineation boundary for wetlands on a horizontal scale that is perpendicular to the wetlands, stream, pond, or lake boundary. On the main stem of the Columbia River above Bonneville Dam, buffer zones shall be measured landward from the normal pool elevation of the Columbia River. The following buffer zone widths shall be required:

(a) A minimum 200-foot buffer on each wetland, pond, lake, and each bank of a perennial or fish bearing stream, some of which can be intermittent.

(b) A 50-foot buffer zone along each bank of intermittent (including ephemeral), non-fish bearing streams.

(c) Maintenance, repair, reconstruction and realignment of roads and railroads within their rights-of-way shall be exempted from the wetlands and riparian guidelines upon demonstration of all of the following:

(i) The wetland within the right-of-way is a drainage ditch not part of a larger wetland outside of the right-of-way.

(ii) The wetland is not critical habitat.

(iii) Proposed activities within the right-of-way would not adversely affect a wetland adjacent to the right-of-way.

(3) The buffer width shall be increased for the following:

(a) When the channel migration zone exceeds the recommended buffer width, the buffer width shall extend to the outer edge of the channel migration zone.

(b) When the frequently flooded area exceeds the recommended riparian buffer zone width, the buffer width shall be extended to the outer edge of the frequently flooded area.

(c) When an erosion or landslide hazard area exceeds the recommended width of the buffer, the buffer width shall be extended to include the hazard area.

(4) Buffer zones can be reconfigured if a project applicant demonstrates all the following: (1) the integrity and function of the buffer zone is maintained, (2) the total buffer area on the development proposal is not decreased, (3) the width reduction shall not occur within another buffer, and (4) the buffer zone width is not reduced more than 50% at any particular location. Such features as intervening topography, vegetation, man-made features, natural plant or wildlife habitat boundaries, and flood plain characteristics could be considered.

(5) Requests to reconfigure buffer zones shall be considered if an appropriate professional (botanist, plant ecologist, wildlife biologist, or hydrologist) hired by the project applicant (1) identifies the precise location of the rare wildlife/plant or water resource, (2) describes the biology of the rare wildlife/plant or hydrologic condition of the water resource, and (3) demonstrates that the proposed use will not have any negative effects, either direct or indirect, on the affected wildlife/plant and their surrounding habitat that is vital to their long-term survival or water resource and its long-term function.

(6) The local government shall submit all requests to re-configure rare wildlife/plant or water resource buffers to the Forest Service and the appropriate state agencies for review. All written comments shall be included in the project file. Based on the comments from the state and federal agencies, the local government will make a final decision on whether the reconfigured buffer zones are justified. If the final decision contradicts the comments submitted by the federal and state agencies, the local government shall justify how it reached an opposing conclusion.

Finding: There are no perennial or intermittent stream channels and mapped or unmapped wetlands. near the project area. Therefore, no buffer zones need to be established within the project area.

B. When a buffer zone is disturbed by a new use, it shall be replanted with only native plant species of the Columbia River Gorge.

Finding: There are no buffer zones in the project area.

C. The applicant shall be responsible for identifying all water resources and their appropriate buffers (see above).

Finding: There are no water resources within the project area.

D. Wetlands Boundaries shall be delineated using the following:

(1) The approximate location and extent of wetlands in the National Scenic Area is shown on the National Wetlands Inventory (U.S. Department of the Interior). In addition, the list of hydric soils and the soil survey maps shall be used as an indicator of wetlands.

(2) Some wetlands may not be shown on the wetlands inventory or soil survey maps. Wetlands that are discovered by the local planning staff during an inspection of a potential project site shall be delineated and protected.

(3) The project applicant shall be responsible for determining the exact location of a wetlands boundary. Wetlands boundaries shall be delineated using the procedures specified in the 'Corps of Engineers Wetland Delineation Manual (on-line edition)' and applicable Regional Supplements.

(4) All wetlands delineations shall be conducted by a professional who has been trained to use the federal delineation procedures.

Finding: There are no wetlands within the project area.

E. Stream, pond, and lake boundaries shall be delineated using the bank full flow boundary for streams and the high-water mark for ponds and lakes. The project applicant shall be responsible for determining the exact location of the appropriate boundary for the water resource.

Finding: There are no streams, ponds or lakes within the project area.

F. The local government may verify the accuracy of, and render adjustments to, a bank full flow, high water mark, normal pool elevation (for the Columbia River), or wetland boundary delineation. If the adjusted boundary is contested by the project applicant, the local government shall obtain professional services, at the project applicant's expense, or the local government will ask for technical assistance from the Forest Service to render a final delineation.

Finding: Not applicable.

G. Buffer zones shall be undisturbed unless the following criteria have been satisfied

Finding: There are no buffer zones in the project area.

H. The proposed use must have no practicable alternative as determined by the practicable alternative test.

(1) Those portions of a proposed use that have a practicable alternative will not be located in wetlands, stream, pond, lake, and riparian areas or their buffer zone.

(2) Filling and draining of wetlands shall be prohibited with exceptions related to public safety or restoration/enhancement activities as permitted when all of the following criteria have been met:

(a) A documented public safety hazard exists, or a restoration/ enhancement project exists that would benefit the public and is corrected or achieved only by impacting the wetland in question, and

(b) Impacts to the wetland must be the last possible documented alternative in fixing the public safety concern or completing the restoration/enhancement project, and

(c) The proposed project minimizes the impacts to the wetland.

(3) Unavoidable impacts to wetlands and aquatic and riparian areas and their buffer zones shall be offset by deliberate restoration and enhancement or creation (wetlands only) measures as required by the completion of a SMA mitigation plan.

Finding: Not applicable.

I. Proposed uses and development within wetlands, streams, ponds, lakes, riparian areas, and their buffer zones shall be evaluated for cumulative effects to natural resources and cumulative effects that are adverse shall be prohibited.

Finding: Not applicable.

3. Wildlife and Plants

A. Protection of wildlife/plant areas and sites shall begin when proposed new development or uses are within 1000 feet of a rare wildlife or rare plant area or site. Rare wildlife areas are those areas depicted in wildlife data, including all sensitive wildlife sites and Priority Habitats listed in this Chapter. The approximate locations of rare wildlife and rare plant areas and sites are shown in wildlife and rare plant data.

Finding: The site is within 1000 feet of an occupied area of a state threatened wildlife species, the Western gray squirrel, with 5 nests identified and verified by wildlife biologists. The area is also within 1000 feet of Priority Habitat for winter range of deer and elk, potential habitat for the California Mountain kingsnake (no records to date) and contains viable habitat for several species of migratory and breeding passerine birds (no observations to date). Additionally, the property contains habitat for state endangered Northern Spotted Owl. Information retrieved from IPac (U.S. Fish and Wildlife Service) and Washington States's PHS (Priority Habitat and Species) websites were used to identify sensitive wildlife and habitat at the site.

Project is within 1000 feet of 29 rare plants and 1 rare nonvascular plant but the nature of this project will enhance habitat for these organisms, none of which were found on the site during survey. No additional review is needed for the protection of rare plants.

B. The local government shall submit site plans (of uses that are proposed within 1,000 feet of a rare wildlife or rare plant area or site) for review to the Forest Service and the appropriate state agencies (Oregon Department of Fish and Wildlife or the Washington Department of Wildlife for wildlife issues and by the Oregon Biodiversity Information Center or Washington Natural Heritage Program for plant issues).

Finding: An adequate site plan was submitted for review.

C. The Forest Service wildlife biologists and botanists, in consultation with the appropriate state biologists, shall review the site plan and their field survey records. They shall:

(1) Identify/verify the precise location of the wildlife or plant area or site,

(2) Determine if a field survey will be required,

(3) Determine, based on the biology and habitat requirements of the affected wildlife/plant species, if the proposed use would compromise the integrity and function of or result in adverse effects (including cumulative effects) to the wildlife and plant area or site. This would include considering the time of year when wildlife and plant species are sensitive to disturbance, such as nesting and rearing seasons, or flowering season, and,

(4) Delineate the undisturbed 200-ft buffer on the site plan for rare plants or the appropriate buffer for rare wildlife areas or sites, including nesting, roosting, and perching sites.

(a) Buffer zones can be reconfigured if a project applicant demonstrates all of the following: (1) the integrity and function of the buffer zones is maintained, (2) the total buffer area on the development proposal is not decreased, (3) the width reduction shall not occur within another buffer, and (4) the buffer zone width is not reduced more than 50% at any particular location. Such features as intervening topography, vegetation, man-made features, natural plant or wildlife habitat boundaries, and flood plain characteristics could be considered.

(b) Requests to reduce buffer zones shall be considered if an appropriate professional (botanist, plant ecologist, wildlife biologist, or hydrologist), hired by the project applicant, (1) identifies the precise location of the rare wildlife/plant or water resource, describes the biology of the rare wildlife/plant or hydrologic condition of the water resource, and (3) demonstrates that the proposed use will not have any negative effects, either direct or indirect, on the affected wildlife/plant and their surrounding habitat that is vital to their long-term survival or to the water resource and its long-term function.

(c) The local government shall submit all requests to re-configure rare wildlife/plant or water resource buffers to the Forest Service and the appropriate state agencies for review. All written comments shall be included in the record of application and based on the comments from the state and federal agencies, the local government will make a final decision on whether the reduced buffer zone is justified. If the final decision contradicts the comments submitted by the federal and state agencies, the local government shall justify how it reached an opposing conclusion.

Finding: Five Western gray squirrel nests were identified and marked by WDFW (Washington Department of Fish and Wildlife) biologists in 2022 and verified by the federal (U.S. Forest Service) Wildlife Biologist in Fall 2023. The proposal meets the guideline because protective measures for the 5 nest trees and a 25-foot buffer

around each tree are put in place to prevent any cutting of these structures. Squirrels were observed using the site in Fall 2023 by the USFS botanist and wildlife biologist. If active nests are found during project implementation, no construction activities should occur between March 1st and August 31st within 400 feet of any squirrel nest to minimize disruption of reproductive gray squirrel behavior. Additionally, if presence of spotted owls or their nests are observed, no logging, thinning, or other heavy machinery activities will take place between March 1st and July 15th. A condition of approval shall require that WDFW biologists survey the site prior to project implementation.

Snags, especially those with apparent cavities, should be left standing for gray squirrel natal den site selection and for use by secondary cavity-obligate species such as woodpeckers, migratory passerines, and bats. The proposal meets this guideline for snag preservation in the form of leave trees (decayed Douglas firs), 20" or greater snags, and all oak snags regardless of size. Downed woody material greater than 20" DBH and smaller, soft woody debris will also be created and/or retained to enhance understory and forest floor habitat for other native species.

D. The local government, in consultation with the state and federal wildlife biologists and botanists, shall use the following criteria in reviewing and evaluating the site plan to ensure that the proposed development or uses do not compromise the integrity and function of or result in adverse effects to the wildlife and plant area or site:

(1) Published guidelines regarding the protection and management of the affected wildlife/plant species. Examples include: the Oregon Department of Forestry management guidelines for osprey and great blue heron; Washington Department of Wildlife guidelines for a variety of species, including the western pond turtle, the peregrine falcon, and the Larch Mountain salamander.

(2) Physical characteristics of the subject parcel and vicinity, including topography and vegetation.

(3) Historic, current, and proposed uses in the vicinity of the rare wildlife/plant area or site.

(4) Existing condition of the wildlife/plant area or site and the surrounding habitat of the area or site.

(5) In areas of winter range, habitat components, such as forage and thermal cover, important to the viability of the wildlife must be maintained or, if impacts are to occur, enhancement must mitigate the impacts so as to maintain overall values and function of winter range.

(6) The site plan is consistent with published guidance documents such as "Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources" (Oregon Department of Fish and Wildlife 2008 or most recent version) and Washington's Aquatic Habitat Guidelines (2002 or most recent version).

(7) The site plan activities coincide with periods when fish and wildlife are least sensitive to disturbance. These would include, among others, nesting and brooding periods (from nest building to fledgling of young) and those periods specified.

(8) The site plan illustrates that new development and uses, including bridges, culverts, and utility corridors, shall not interfere with fish and wildlife passage.

(9) Maintain, protect, and enhance the integrity and function of Priority Habitats as listed on the following Priority Habitats Table 1. This includes maintaining structural, species, and age diversity, maintaining connectivity within and between plant communities, and ensuring that cumulative impacts are considered in documenting integrity and function.

Finding: The guideline is met in that it proposes to enhance and improve Oak Woodland habitat for native wildlife, thus sustaining the functionality and utilization of priority habitat in the area.

E. The wildlife/plant protection process may terminate if the local government, in consultation with the Forest Service and state wildlife agency or heritage program, determines (1) the rare wildlife area or site is not active, or (2) the proposed use is not within the buffer zones and would not compromise the integrity of the wildlife/plant area or site, or (3) the proposed use is within the buffer and could be easily moved out of the buffer by simply modifying the project proposal (site plan modifications). If the project applicant accepts these recommendations, the local government shall incorporate them into its development review order and the wildlife/plant protection process may conclude.

Finding: Because historic nest sites have been identified and visual confirmation of gray squirrels have been observed using the area, defined buffers around nest trees are set in order to limit logging, thinning, and other construction activities during the reproductive period. Guideline is met.

F. If the above measures fail to eliminate the adverse effects, the proposed project shall be prohibited, unless the project applicant can meet the Practicable Alternative Test and prepare a mitigation plan to offset the adverse effects by deliberate restoration and enhancement.

Finding: Timing and buffer restrictions should limit adverse effects for individuals and the local Western gray squirrel population, given the scale and low impact of the project. Guideline is met.

G. The local government shall submit a copy of all field surveys (if completed) and mitigation plans to the Forest Service and appropriate state agencies. The local government shall include all comments in the record of application and address any written comments submitted by the state and federal wildlife agency/heritage programs in its development review order.

Finding: This guideline has been met with surveys conducted by state WDFW biologists and a subsequent site visit by USFS staff to confirm habitat conditions and species presence for a final decision.

H. Based on the comments from the state and federal wildlife agency/heritage program, the local government shall make a final decision on whether the proposed use would be consistent with the wildlife/plant policies and guidelines. If the final decision contradicts the comments submitted by the state and federal wildlife agency/heritage program, the local government shall justify how it reached an opposing conclusion.

Finding: This guideline is met through an agreement of decision between state and federal agency wildlife biologists.

I. The local government shall require the project applicant to revise the mitigation plan as necessary to ensure that the proposed use would not adversely affect a rare wildlife/plant area or site.

Finding: Not applicable.

4. Soil Productivity

A. Soil productivity shall be protected using the following guidelines:

(1) A description or illustration showing the mitigation measures to control soil erosion and stream sedimentation.

(2) New developments and land uses shall control all soil movement within the area shown on the site plan.

(3) The soil area disturbed by new development or land uses, except for new cultivation, shall not exceed 15 percent of the project area.

(4) Within 1 year of project completion, 80 percent of the project area with surface disturbance shall be established with effective native ground cover species or other soil-stabilizing methods to prevent soil erosion until the area has 80 percent vegetative cover.

Finding: There are no stream channels within or adjacent to the project area so sediment delivery into water resources is not expected. A condition of approval shall require that ground-based equipment only be used on established roads and temporary skid trails to limit soil disturbance. A condition of approval shall require that the use of ground-based equipment be halted when the soil is saturated or if rutting >12 inches and puddling begin to occur. A condition of approval shall require that 80% of disturbed areas are reseeded with appropriate ground cover species after the conclusion of the project.

SMA Forest Practice Guidelines for Natural Resources

(5) Forest practices shall maintain the following in addition to applicable natural resources guidelines in Part I, Chapter 3, SMA Natural Resources:

(a) Silvicultural prescriptions shall maintain the desired natural forest stand structures (tree species, spacing, layering, and mixture of sizes) based on forest health and ecosystem function requirements. Forest tree stand structure shall meet the requirements listed in the Desired Forest Structure and Pattern Table for each vegetation type. Forest tree stand structure is defined as the general structure of the forest in each vegetation type within which is found forest openings.

Finding: The proposal meets the guideline.

(b) Created forest openings shall be designed as mosaics not to exceed the limits defined as Desired in the Desired Forest Structure and Pattern Table unless proposed as a deviation as allowed under the scenic resource guideline in Review Uses1.X(4)(f).

Finding: The proposal meets the guideline

(c) Snag and down wood requirements shall be maintained or created as listed in the Desired Forest Structure and Pattern Table for each vegetation type.

Finding: The proposal meets the guideline

(d) If the treatment is proposed to deviate from the snag and down wood requirements based on forest health or ecosystem function requirements, a Stewardship Plan shall be required and shall demonstrate why a deviation from the snag and down wood requirements is required.

Finding: The proposal meets the guideline

Desired Forest Structure Table (East Conifer)

VEGETATION TYPE	CATEGORY		MP REQUIREMENTS	PROPOSED	FINDING
East Conifer	Forest Structure (Average % total canopy closure (cc))		40-80% canopy closure, Understory layer less than 20% of total cc	**Average % total canopy will be 50%**	**Guideline Met**
	Forest Openings		Openings less than 1 acre. Openings have 0-40% canopy closure. Openings widely dispersed.	**No Openings will be created**	**Guideline Met**
	Leave Trees		None required	**N/A**	**Guideline Met**
	Average Down Wood (Pieces 30 ft long per acre (scattered))		3-6 pieces greater than 20” dbh	**Down woody material addressed in project design**	**Guideline Met**
	Average Snags (# of conifers per acre. Snags are 20-40ft in height)		5 snags at 10”-20” dbh and 3 snags greater than 20” dbh	**No snags will be created**	**Mitigated with trees left for snag recruitment late in succession**

Recreation

SMA Guidelines

1. New development and land uses shall not displace existing recreational use.

Finding: There are no existing recreational uses on the subject parcel, and therefore no recreation uses will be displaced by this forest practice.

2. Recreation resources shall be protected from adverse effects by evaluating new development and land uses as proposed in the site plan. An analysis of both onsite and offsite cumulative effects shall be required.

Finding: There are no recreation resources onsite or offsite in the vicinity of the proposed forest practice. Therefore there are no effects to recreation resources, and no cumulative effects.

3. New pedestrian or equestrian trails shall not have motorized uses, except for emergency services.

Finding: This guideline does not apply.

4. Mitigation measures shall be provided to preclude adverse effects on the recreation resource.

Finding: The proposed forest practice will not have adverse effects on recreation resources, so no mitigation measures are necessary.

Finding: Guidelines 5-9 of this chapter do not apply.

Recreation Intensity Classes SMA Guidelines

Finding: The proposed forest practice is not a recreation development. These guidelines do not apply.

Conclusion

The proposed forest practice is consistent with the National Scenic Area Management Plan Policy and Guidelines, provided it meets the criteria and conditions listed in the Findings of Fact and Consistency Determination.

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