

# Critical Area Report



Prepared For: Packwood Land Company

Site Address: US Highway 12, Packwood

Tax Parcel Number: 035185001000 & 035185002000

Date: December 5, 2022

Prepared By:  
**Environmental Design, LLC.**  
*Septic Design • Wetlands • Mapping*  
901 L Street, Centralia, WA 98531  
(360) 219-3343

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## **Introduction:**

Environmental Design, LLC conducted a Critical Area Study on December 15, 2021 to determine if critical area habitat is present on the site located at Highway 12 in Packwood. The client is proposing a development on the site.

In order to conduct a thorough review of the site to determine if critical areas are present on the site several resources were reviewed. The project started by pulling research and reviewing the research from several sources. After reviewing the research, it was noted that a stream is mapped on the northwest corner of the site on the county base map; however, it was not mapped in any of the other sources as being present or as a critical habitat. A site visit was then conducted to verify if critical areas were present.

## **Site Description:**

The site is located at Highway 12 in Packwood, Washington. The site is in Section 21 of Township 13 North, Range 09 East and is identified by Lewis County with the parcel numbers 035185001000 and 035185002000. The total acreage of the parcels are about 14 acres. The site has been maintained as vacant property. The topography of the site is flat and has a mapped stream on the northwest property line.

The area around the site is primarily residential and vacant land.

## **Methodology:**

A site visit was conducted on December 15, 2021 where Environmental Design walked the property and reviewed the site for critical areas. The site has an open field area and a forested area with an overall flat topography. The northwest corner was inspected for stream habitat.

## **Observations:**

### **Vegetation:**

Wetland Vegetation has been classified into indicator statuses of how likely the plant is to be found in a wetland habitat. The indicator status of each plant species can be found on the data forms. The different indicator statuses are listed below:

- Obligate Wetland (OBL) – highly likely to be in a natural wetland environment
- Facultative Wetland (FACW) –most likely to be present in a natural wetland environment
- Facultative (FAC) – can be present in both a natural wetland and non-wetland environment
- Facultative Upland (FACU) –may be present in a natural wetland, but most likely to be seen in non-wetland conditions
- Obligate Upland (UPL) – most likely to occur in non-wetland conditions
- No Indicator – the plant does not have enough data to determine the indicator status yet

The site is consistently vegetated with a variety of field grass, douglas fir and brush species. The primary vegetation identified is as listed:

<b>Common Name</b>	<b>Scientific Name</b>	<b>Indicator</b>
Douglas Fir	<i>Pseudotsuga menziesii</i>	FACU
Annual Ryegrass	<i>Poa annua</i>	FAC
Oxeye Daisies	<i>Leucanthemum vulgare</i>	FACU
Sword Fern	<i>Polystichum munitum</i>	FACU

The vegetation did not meet the criteria for wetland habitat. The surrounding areas of the site were observed to be consistent with the same vegetation.

### Soils:

The site is mapped as Greenwater Loamy Sand Series according to the U.S.D.A Natural Resources Conservation Service *Soil Survey of Lewis County, Washington (1980)*. The series is not listed on the hydric soils list produced by the U.S.D.A Natural Resources Conservation.

The NRCS describes Greenwater Loamy Sand series as a soils located in escarpments and on terraces. In a representative profile the first layer is a gravelly loamy sand for the first 8 inches and then is a fine sand for the depths between 8 - 19 inches. The following layer extends to a depth of 60 inches and is sand.

The soil on the site was consistent with the mapped the series and is very well drained.

### Hydrology:

The site appears to be well drained and did not have evidence of standing water, drainage patterns or oxidized rhizospheres in the soil profile

There is a depressional channel located at the northwest corner of the site. The channel did not have water present during the site visit; however, it does appear to run towards a pond located north of the site. The channel appeared to be a seasonal drainage that contains excess water during high water events.

### Wildlife:

The area is shown to have Mule Deer, Elk and Spotted Owl present as a priority species listed on the Priority Habitat Species Map produced by Fish and Wildlife. The site has a field for feeding and a forested area that provides great habitat for wildlife.

### Topography:

The topography of the site is flat and a channel is located on the northwest corner of the site.

### **Surrounding Critical Areas and Impacts:**

The National Wetlands Inventory (NWI) map and other maps do not depict mapped wetlands within the area. It needs to be noted that the NWI maps and GeoData Center need to be used cautiously as they compile general wetland data.

Environmental Design concludes that stream habitat and wetlands are not located on the site. A channel area is present on the northwest corner; however, it does not meet the criteria of being a stream as it does not have an ordinary highwater mark or a defined area where water is present throughout most of the year. The channel is a seasonal drainage that alleviates surrounding areas during high water events.

### **Conclusions:**

Environmental Design, LLC concludes that wetland and stream habitat are not present on the site or within 300 feet of the site. A seasonal drainage is present in the northwest corner and a buffer is not required as the drainage is only active during high water events and does not provide habitat for fish species.

## **References:**

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Lewis County. Critical Areas Map. Online map. <https://fortress.wa.gov/lewisco/home/>.

Soil Conservation Service. 1995. Hydric Soils for Washington. Online document: <http://www.statlab.iastate.edu:80/soils/hydric/wa/html>.

Soil Conservation Service. 1980. Soil Survey of Lewis County, Washington. U.S. Department of Agriculture, Washington DC.

Soil Conservation Service. 1990. Soil Survey of Thurston County, Washington. U.S. Department of Agriculture, Washington DC.

U.S Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0), ed. J. S. Wakeley, R.W. Lichvar, and C. V. Noble. ERDC / EL TR-103. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Washington State Department of Ecology. 1997. Washington State Wetlands Identification and Delineation Manual. Publication # 96-94. Olympia, Washington.

Washington State Department of Ecology. 2004. Washington State Wetlands Rating System: Western Washington Revised. Publ. # 04-06-025. Olympia, Washington.

Washington Department of Fish and Wildlife. Priority Habitat Species (PHS) Database. (August 2014)

*The determination of this wetland was completed by Environmental Design, LLC. The determination of this wetland is based on scientific method and our best professional judgment. Environmental Design, LLC agrees that the conclusion should agree with the local, state, and federal regulatory agencies.*

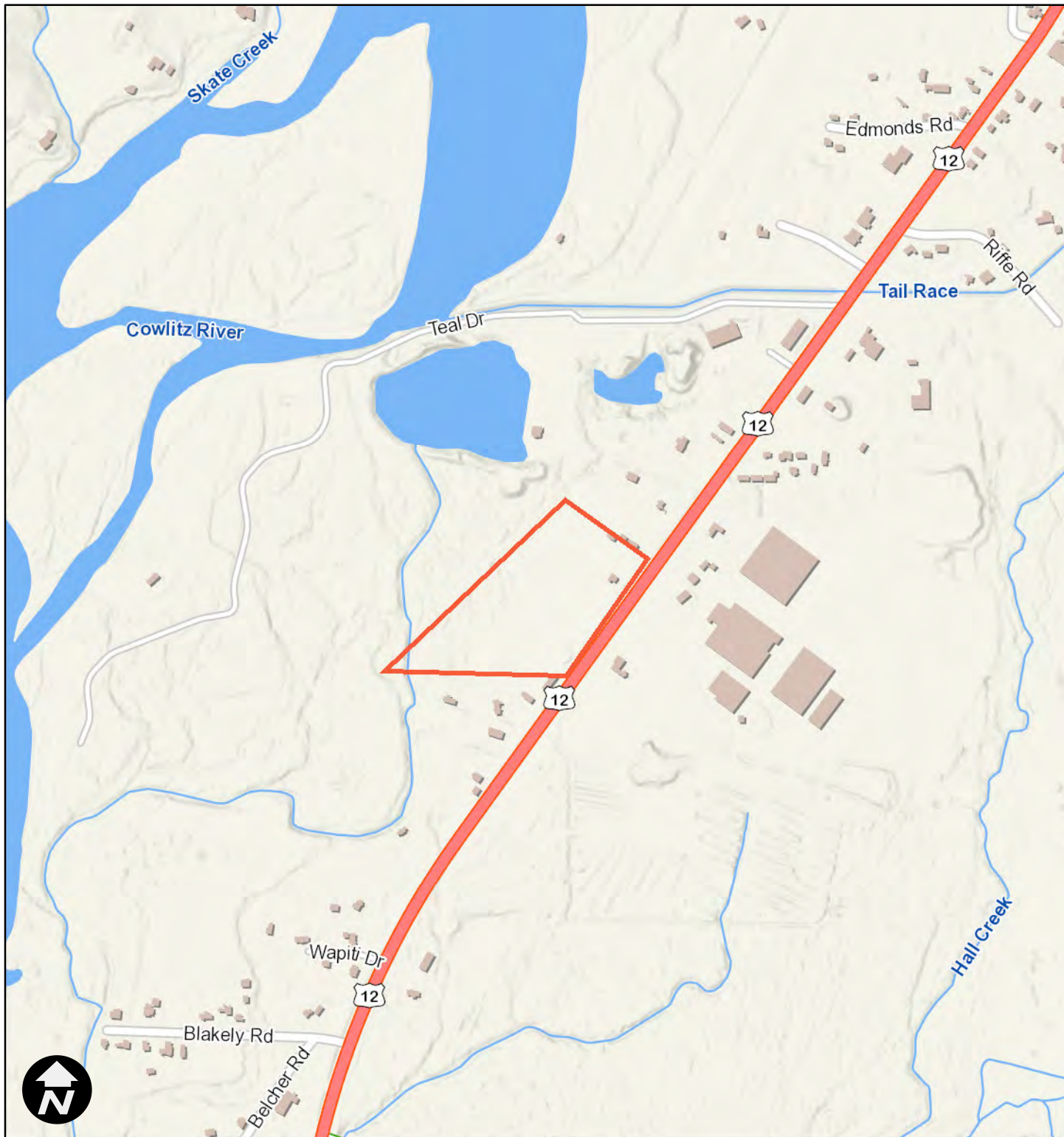
## **Completed By:**

*Becky Rieger*

**Becky Rieger, Wetland Specialist**

**Appendix A:**  
**Critical Area Maps**

# Figure 1: Site Location Map



12/6/2022, 11:29:37 AM

1:9,028

0 400 800 1,600 ft  
NAD 1983 StatePlane Washington South FIPS 4602 Feet



Lewis County does not guarantee the accuracy of the information shown on this map and is not responsible for any use or misuse by others regarding this material. It is provided for general informational purposes only. This map does not meet legal, engineering, or survey standards. Please practice due diligence and consult with licensed experts before making decisions.

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SEASONAL DRAINAGE



THE PROPERTY LINES IN THIS MAP ARE APPROXIMATE AND ARE NOT INTENDED TO BE USED AS A SURVEY.

## FIGURE 2: SITE MAP

**Environmental Design, LLC.**  
*Septic Design • Wetlands • Mapping*  
 901 L Street  
 Centralia, Wa. 98531  
 (360) 219-3343

CLIENT NAME:	PACKWOOD LAND	SITE ADDRESS:	US HWY 12
MAILING ADDRESS:	1117BROADWAY STE 500		PACKWOOD
	TAOMA, WA 98402	PARCEL NUMBER:	----
PHONE NUMBER:	----	SEC-TWN-RNG:	21-13N-09E

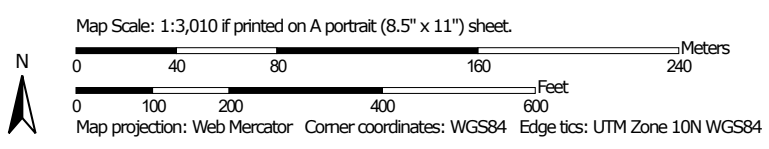
JOB NUMBER:	2021-349
DATE:	12.05.2022
DRAFTED BY:	BJR
REVIEWED BY:	BJR



Soil Map—Lewis County Area, Washington  
(Figure 3: NRCS Soil Map)



Soil Map may not be valid at this scale.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lewis County Area, Washington

Survey Area Data: Version 22, Sep 8, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 11, 2020—Aug 30, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
92	Greenwater loamy sand	36.4	90.1%
247	Xerorthents, spoils	4.0	9.9%
<b>Totals for Area of Interest</b>		<b>40.4</b>	<b>100.0%</b>





Figure 4: NWI Map



December 6, 2022

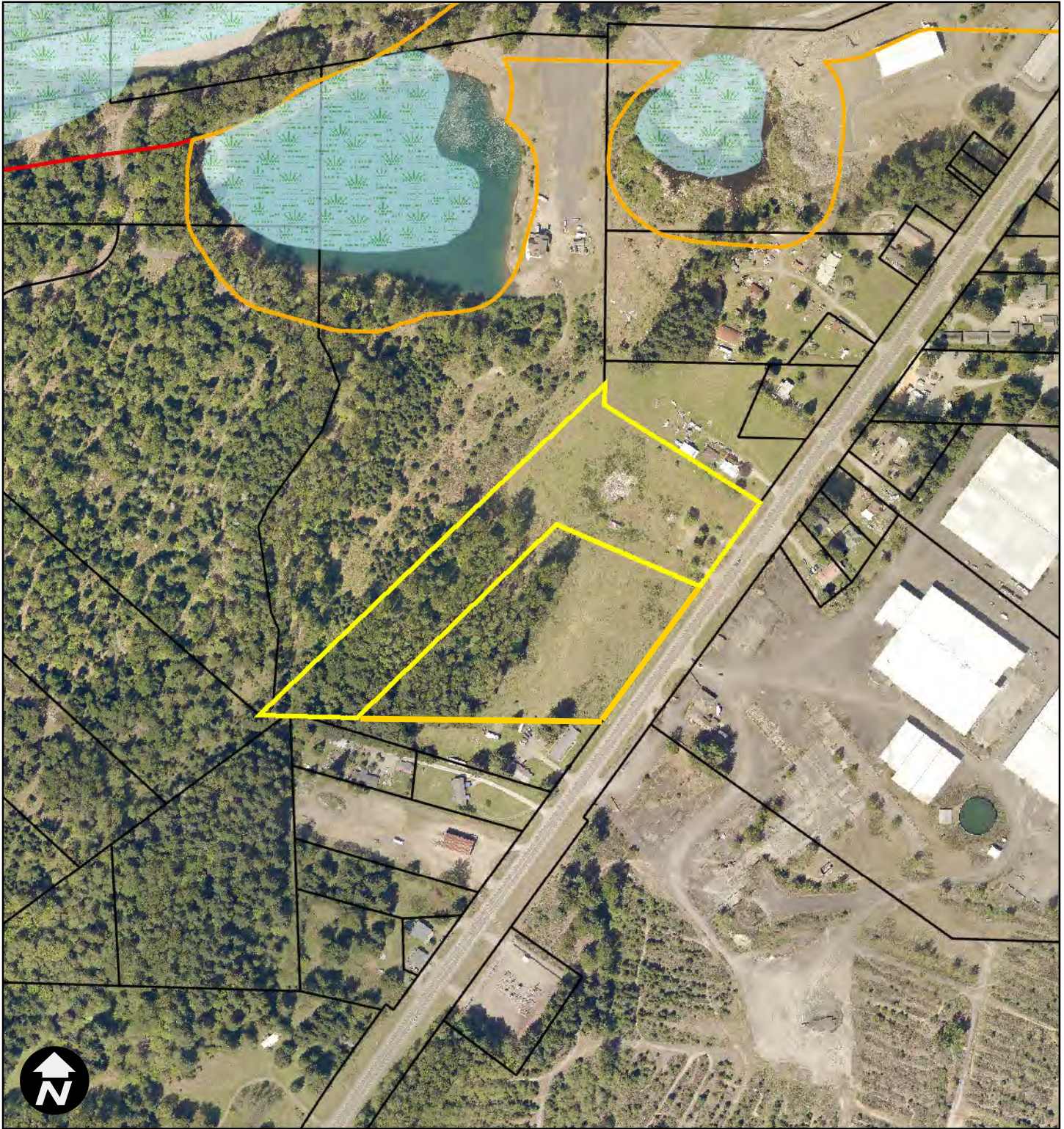
**Wetlands**

- |   |                                |   |                                   |   |          |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland       |  | Lake     |
|  | Estuarine and Marine Wetland   |  | Freshwater Forested/Shrub Wetland |  | Other    |
|   |                                |  | Freshwater Pond                   |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



# Figure 5: Lewis County Critical Area Map



12/5/2022, 5:14:18 PM

1:4,514

- Parcels
- Wetlands
- Hydric Soils
- Fish 150'
- Non-Fish 75'
- Parcels

**Stream Buffers**

- Shoreline 150'

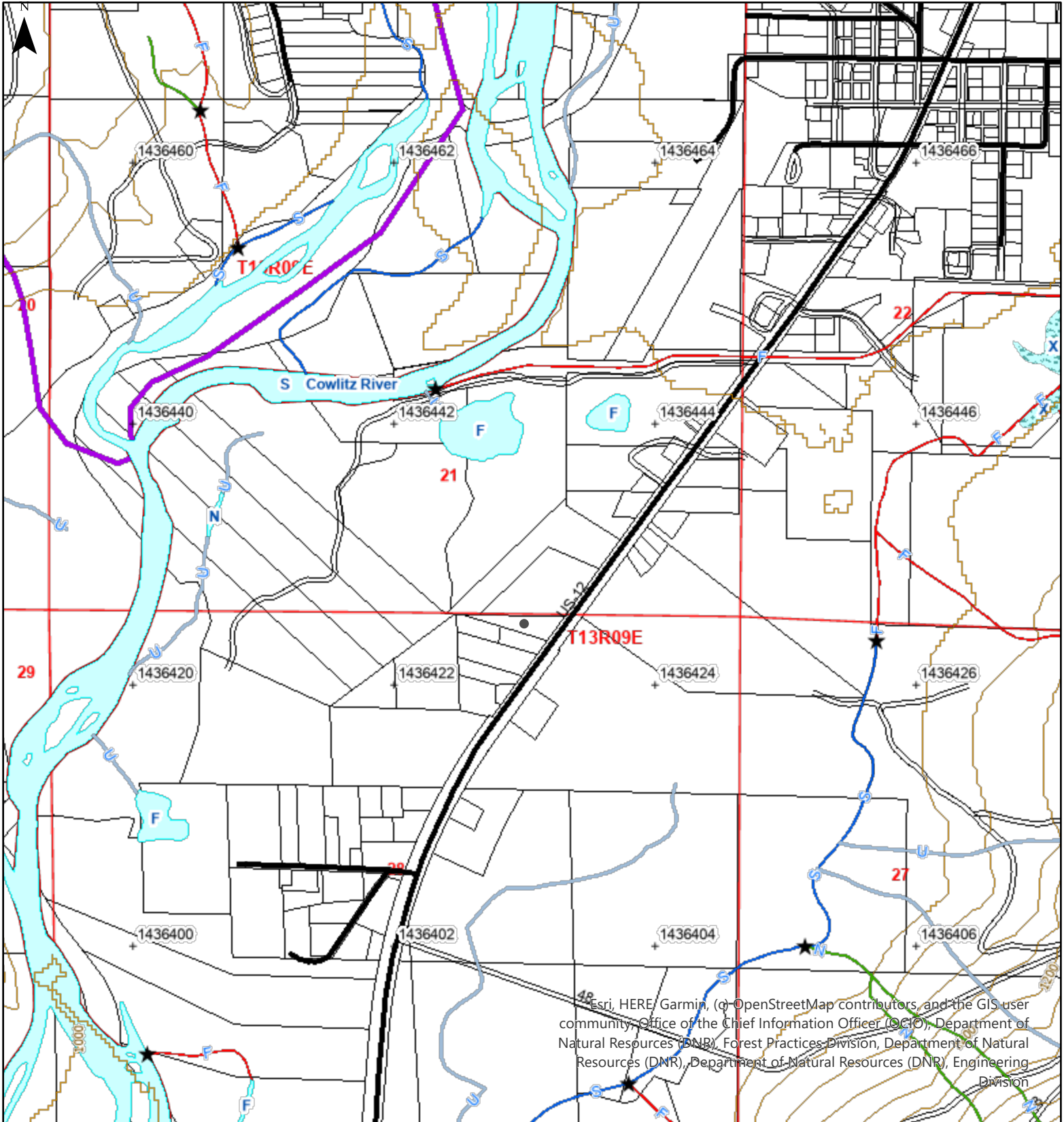
0 205 410 820 ft  
 NAD 1983 StatePlane Washington South FIPS 4602 Feet



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# Forest Practices Activity Map - Application #



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Office of the Chief Information Officer (OCIO), Department of Natural Resources (DNR), Forest Practices Division, Department of Natural Resources (DNR), Department of Natural Resources (DNR), Engineering Division

### Map Symbols

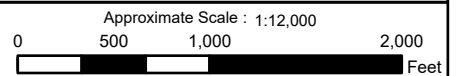
- Harvest Boundary
- - - Road Construction
- - - Stream
- RMZ / WMZ Buffers
- Rock Pit
- Landing
- ▽ Waste Area
- 🌲 Clumped WRTS/GRTS
- 🏠 Existing Structure

### Additional Information

Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.

### Legal Description

S27 T13.0N R09.0E, S20 T13.0N R09.0E, S29 T13.0N R09.0E, S28 T13.0N R09.0E, S21 T13.0N R09.0E, S22 T13.0N R09.0E



Date: 12/5/2022 Time: 5:19 PM



# Priority Habitats and Species on the Web



**Report Date: 12/05/2022**

## PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Sensitive Location
Mule and black-tailed deer	N/A	N/A	No
Rocky Mountain elk	N/A	N/A	No
Northern Spotted Owl	Threatened	Endangered	Yes

## PHS Species/Habitats Details:

Mule and black-tailed deer	
Scientific Name	<i>Odocoileus hemionus</i>
Priority Area	Regular Concentration
Site Name	UPPER COWLITZ RIVER DEER WINTER RANGE
Notes	DEER WINTER RANGE - HEAVY CONCENTRATIONS OF DEER MOVE DOWN FROM SURROUNDING UPPER ELEVATION AREAS. HIGHEST NUMBERS OBSERVED USING TOE SLOPES OF RIDGES & RIVER VALLEY RIPARIAN CORRIDORS & SMALL DRAINAGE BOTTOMS.
Source Record	905302
Source Dataset	PHSREGION
Source Name	OAKERMAN, GROVER WDW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	<a href="http://wdfw.wa.gov/publications/pub.php?id=00612">http://wdfw.wa.gov/publications/pub.php?id=00612</a>
Geometry Type	Polygons

Rocky Mountain elk	
Scientific Name	<i>Cervus elaphus nelsoni</i>
Priority Area	Regular Concentration
Site Name	HIGHLAND VALLEY ELK WINTER RANGE
Accuracy	1/4 mile (Quarter Section)
Notes	ELK WINTER RANGE - RANGES FROM 100 TO 500 ELK-RESIDENTIAL ENCROACHMENT RESULTING IN NUMEROUS DAMAGE COMPLAINTS MAIN CONCENTRATION ALONG RIVER PLAIN. LOCAL NO SHOOTING ORDINANCES ARE COMPOUNDING PROBLEMS IN PACKWOOD AND RANDLE.
Source Record	905385
Source Dataset	PHSREGION
Source Name	KELLY, GEORGE WDW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	<a href="http://wdfw.wa.gov/publications/pub.php?id=00614">http://wdfw.wa.gov/publications/pub.php?id=00614</a>
Geometry Type	Polygons



Northern Spotted Owl	
Scientific Name	<i>Strix occidentalis</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	Threatened
State Status	Endangered
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	<a href="http://wdfw.wa.gov/publications/pub.php?id=00026">http://wdfw.wa.gov/publications/pub.php?id=00026</a>

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

**Appendix B:**  
**Site Pictures**

**Environmental Design, LLC.**  
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View of Site



View to Drainage



View to Drainage



**Environmental Design, LLC.**  
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View of Drainage



View of Drainage



# **Credentials**

# Becky Rieger

Home Address:  
901 L Street  
Centralia, WA 98531

Phone: (360) 219-3343

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## Education

Associates Degree in Arts  
Centralia Community College  
Date of Graduation: June 2007  
Centralia, Washington

Associates Degree in Applied Science  
Major in Geographic Information Systems  
Grays Harbor Community College  
Date of Graduation: June 2002  
Aberdeen, Washington

## Continuing Education / Awards / Organizations

Coastal Training Program

- o Certificate in Using the Revised Wetland Rating System (2014)
- o Certificate in Identifying Hydric Soils (2012)
- o Certificate in Using the Revised Wetland Rating System (2007)

Oregon State University (2006)

- o Certificate in Soil Identification

Portland State University Wetland Program (2006)

- o Certificate in Wetland Delineation Course
- o Certificate in Advanced Hydric Soils and Hydrology Course
- o Certificate in Hydrophytic Vegetation Identification Course

Licensed On-Site Wastewater Designer (2009-Current) License # 5100369

Olympia Master Builders

- o Lewis County Chapter Vice President
- o Olympia Master Builders Associate Vice President

Washington On-Site Sewage Association

- o SW Washington Designer Rep. (2018 – Current)

## Professional Experience

**Licensed Designer / Wetland Specialist / Owner** May 5, 2010 - Current  
Environmental Design, LLC

- Complete Site and Soil Evaluations, Site Consultations, Topography Field Work
- Complete Septic Designs and mapping projects using MicroSurvey
- Complete Wetland and other Critical Area Reports per regulations in multiple jurisdictions
- Perform presentations to educate people about wetlands and septic systems

**Assistant Designer / Certified Wetland Specialist** Feb. 24, 2005 – Oct. 30, 2007  
Goode & Associates Supervisor: Jeannie Yackley

- Complete designs of on-site wastewater designs for county submittal
- Communicate with county regulators, installers, and clients
- Conduct wetland determinations, delineations, mitigations and consultations
- Research projects, apply for permits, and conduct final inspections on installed septic systems
- Perform presentations to educate people about wetlands and septic systems