



## **CRITICAL AREA STUDY**

**FOR**

***CHIMPANZEE SANCTUARY NW***

***DRIVEWAY REPLACEMENT***

***KITTITAS COUNTY, WA***

*Wetland Resources, Inc. Project #18059*

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## 1.0 INTRODUCTION

Wetland Resources, Inc. (WRI) performed a site investigation on March 22, 2018 to locate environmentally critical areas in the vicinity of a proposed driveway location. The investigation area is located at 25351 Hwy 10 in Kittitas County, Washington (Kittitas County tax parcels: 12628 and 666734). The Public Land Survey System (PLSS) locator for the subject property is Section 11, Township 19N, Range 16E, W.M.

The subject site is accessed from the west via a pair of existing driveways off of Hwy 10, and is currently developed as an existing chimpanzee Sanctuary with associated residential, staff, and storage buildings. Historic farm structures and land development are also present on the subject parcels. Surrounding land use is agricultural and timber. Bordering the site on the west is the Yakima River separated by Hwy 10, to the north and east are timber areas that have been cleared in recent years due to wildland fires, and to the south is agricultural land used for livestock. The subject parcels no longer support agricultural practices, which used to occur on the property, and the residence in the northern portion of the site is vacant. The Topography of the site is relatively flat in the areas of the proposed project work, but has a moderate to steep western aspect over most of the property as the land slopes down to the Yakima River.

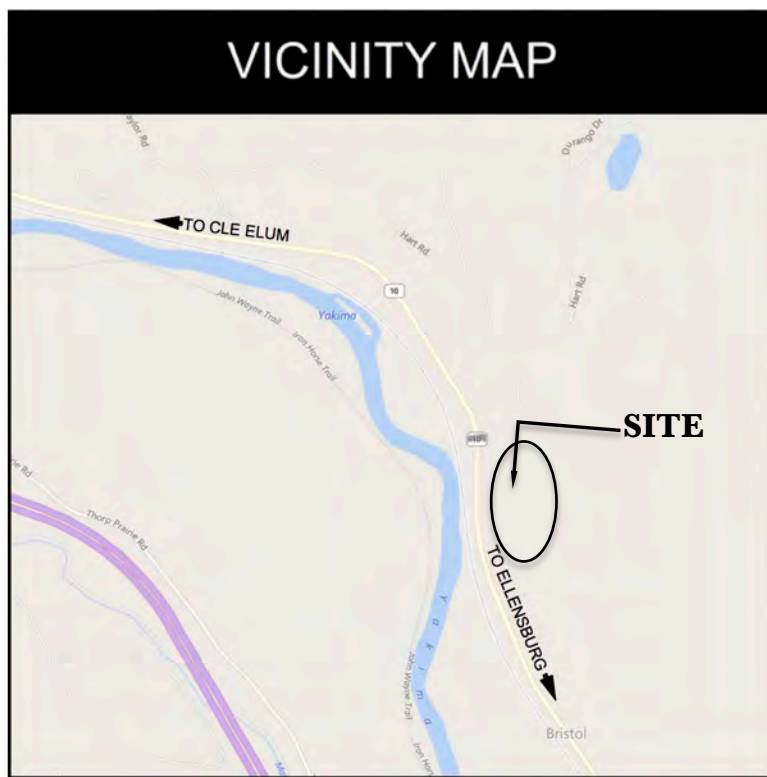


**Figure 1:** Aerial view of the subject property existing conditions.

Two Category III wetlands (A and C) and one Category IV wetland (B) are present within the investigation area east of the proposed driveway construction site (see map in *Appendix C*). An additional hydric area has formed due to seepage from an upslope irrigation pond within Wetland C, and thus does not qualify as a regulated wetland pursuant to KCC 17A.02.310. All of the critical areas are in close association with one another (due to their past irrigation function for agricultural use), and lie east and southeast of the adjacent project area. No other environmentally critical areas, priority species habitat, or species of local importance are present on or adjacent to the investigation area.

Pursuant to Kittitas County Code (KCC) 17A.04.020, Category III wetlands over 10,000 square feet typically receive buffers 20 to 80 feet wide depending on several site and project considerations. Category IV wetlands over 43,560 square feet (1 acre) typically receive buffers up to 25 feet wide. KCC 17A.04.045 stipulates that building setback lines, equal to the side yard setback for a given zoning district, extend from the edge of wetland buffers. The subject site is located within the Forest and Range District, with a setback width of 10 feet (KCC 17.56.060).

The area west of the northernmost wetland (Wetland A) is highly disturbed from past land use activities, is composed of fill material, and lacks vegetative cover. This area is unable to provide or enhance the protection of Wetland A, and is not an integral part of the critical area. Therefore, the area west of Wetland A does not meet the definition of Buffer, per KCC 17A.02.050.



**Figure 2:** Vicinity map of the investigation area.

## 1.1 PROJECT DESCRIPTION

Chimpanzee Sanctuary NW, hereafter referred to as the applicant, is proposing to construct a driveway for continued access to their chimpanzee care facility. Currently, access is granted via the existing driveway entering parcel # 666734, which is the southern of the two existing driveways extending from Hwy 10. As a requisite of necessary updates that are proposed to the chimp housing facility, Kittitas Public works is requiring that the applicant abandon this southern driveway due to sightline safety considerations associated with that segment of the highway. A new access driveway is necessary as part of the maintenance of existing facilities on the subject

property. As such, construction of a replacement access driveway is an allowed use under KCC 17A.04.040.

The proposed new driveway will spur off of the existing northern driveway, extend south/southwest across the property, and link to the existing facility parking area currently served by the southern access.

As discussed in the analysis of necessary critical area protections in *section 3.0* below, the recommended buffer widths for these aquatic features vary by the condition of their associated critical area. The driveway location has been designed to avoid the adjacent on-site critical areas and associated buffers. No wetland or buffer impacts will result from construction of the proposed access driveway. Building setback areas do not apply to driveways.

## **2.0 CRITICAL AREAS DETERMINATION**

### **2.1 REVIEW OF EXISTING INFORMATION**

Prior to conducting the site investigation, public resource information was reviewed to gather background information on the subject property and the surrounding area in regards to wetlands, streams, and other critical areas. These sources included:

- United States Fish and Wildlife Service National Wetlands Inventory (NWI): The NWI identifies a diked/impounded permanently flooded pond approximately 250 feet southeast of the proposed project area. This mapped feature is the irrigation pond constructed within Wetland C. Additionally, an intermittent stream is mapped flowing approximately east-west just south of the identified pond. However, this feature is not present. Portions of this mapped area do comprise a portion of Wetland C, but the mapped feature is most likely referring to sheet flow/possible slope wetland that is the primary hydrologic source of the wetlands delineated during our field investigation. This area is outside of the range of this investigation.
- StreamNet Mapper: The pond within Wetland C is mapped. No streams are identified.
- Washington Department of Natural Resources Forest Practices Application Mapping Tool: The constructed pond on Wetland C is identified as a non-fish water. An “unknown stream” is identified in the higher elevation portion of the areas mapped as a stream by NWI. This area is the surface flow that primarily sources the hydrology of the delineated wetlands.
- USDA/NRCS Web Soil Survey: The Web Soil Survey indicates that the investigation area is underlain by Squak-Qualla Complex, 5 to 15 percent slopes.
- Washington Department of Fish and Wildlife (WDFW) SalmonScape Interactive Mapping System: Several salmonid species use the nearby Yakima River. However no streams or waterways connect with the critical areas within the investigation area. Also, hydrology of these features is constrained to the site, isolating the wetlands.
- WDFW Priority Habitat and Species (PHS) Interactive Map: The PHS Interactive Map does not show any wetlands or streams on the subject property. Several priority species are mapped on the subject property. However, certain high-profile species have mapped habitats

that encompass entire township-range quadrants, and are not specific to a given area. Thus, while habitat polygons for both Northern Spotted Owl (*Strix occidentalis*) and gray wolf (*Canis lupis*) are depicted, these broad expanses are “masked areas” intended to keep the locations of these species intentionally vague. Given the highly disturbed site conditions present on the subject parcels, habitat for these species is not present. Additionally, the Yakima River and several major roads (including Interstate 90) lie between the subject property and the vast majority of the masked area. Mule deer (*Odocoileus hemionus hemionus*) habitat is mapped in the investigation area.

## **2.2 CRITICAL AREAS DETERMINATION METHODOLOGY**

Wetland Resources staff conducted a site visit on March 22, 2018 to locate any streams, lakes, and wetlands occurring within and near the project site.

Ordinary High Water Mark (OHWM) boundaries of lakes, streams, and marine waters are determined through use of methodology presented in The Washington State Department of Ecology document *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et al 2016). Designation of streams and lakes is consistent with the water typing system established in the Washington Administrative Code (WAC) 222-16-030.

Wetland boundaries were determined using the routine approach described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers 2010). Under the routine methodology, the process for making a wetland determination is based on three steps:

- 1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
- 2.) Examination of the site for hydric soils;
- 3.) Determining the presence of wetland hydrology

The following criteria must be met in order to make a positive wetland determination:

### **2.2.1 Hydrophytic Vegetation Criteria**

The Corps Manual and 2010 Regional Supplement define hydrophytic vegetation as “the assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence.” Field indicators are used to determine whether the hydrophytic vegetation criteria have been met. Examples of these indicators include, but are not limited to, the rapid test for hydrophytic vegetation, a dominance test result of greater than 50%, and/or a prevalence index score less than or equal to 3.0.



### **2.2.2 Soils Criteria and Mapped Description**

The 2010 Regional Supplement (per the National Technical Committee for Hydric Soils) defines hydric soils as soils “that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.” Established field indicators are used to determine whether a given soil meets the definition for hydric soils. Indicators are numerous and include, but are not limited to, presence of a histosol or histic epipedon, a sandy gleyed matrix, depleted matrix, and redoximorphic features.

According to NRCS Web Soil Survey, the soil map unit Squak-Qualla Complex, 5 to 15 percent slopes, is predicted to occur in the investigation area.

### **2.2.3 Hydrology Criteria**

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and chemically reducing conditions, respectively. The strongest indicators of these conditions include the presence of surface water, a high water table, and/or soil saturation within at least 12 inches of the soil surface.

## **2.3 BOUNDARY DETERMINATION FINDINGS/RESULTS**

Based on the results of the site investigation, three wetlands (Wetlands A, B, and C) are located in the investigation area. Wetlands were classified pursuant to KCC 17A.04.010.

Streams, lakes, marine waters, and wetlands are additionally classified using the U.S. Fish and Wildlife Service (USFWS) document, *Classifications of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), also known as the “Cowardin Classification System.” Single regulated aquatic features can be comprised of multiple units with different Cowardin classifications; the primary Cowardin units comprising assessed features are listed in these results. The U.S. Army Corps of Engineers manual, *A Hydrogeomorphic Classification for Wetlands* (Brinson 1993), or HGM system, is also used for further wetland classification.

KCC 17A.04.010 is non-specific regarding the methodology for rating wetlands. For this report, wetland categories were determined through application of the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Hruby 2014). Several of the questions within this system pertain to the current land uses surrounding a wetland unit. While the surrounding conditions of the on-site wetlands have the form of relatively intense land uses (i.e. agricultural, residential), these areas are not presently used in this manner. The Washington Wetland Rating systems assesses the value of wetland units based on current existing conditions.

The applicant acquired the subject parcels to build and operate the on-site chimpanzee facility, and does not use the areas surrounding the delineated wetlands for agricultural uses. Additionally, the residence located east of Wetland A is vacant due to permitting issues instigated by the previous landowner. Therefore, the areas around the wetland are rated based on their

current level of land use as directed by the rating system, which may not appear consistent with aerial imagery of the investigation area. For example, for Wetland A we answered question D 2.2 as no because the current land uses within 150 feet of the wetland edge do not generate pollutants.

### 2.3.1 Wetland A

**Rating:** Category III

**Size:** Approximately 21,629 S.F. (~0.50 acres)

**Cowardin Classification:**

- Palustrine, Aquatic Bed, Permanently Flooded (PABH)
- Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated (PEM1E)

**HGM Class:** Depressional

**Recommended Buffer:** 40 feet

Wetland A receives 18 total points based on functions. Wetlands that score between 16 and 18 total points are rated as Category III. Wetlands of this category typically receive buffers 20 to 80 feet wide depending on several site and project considerations (per KCC 17.04.020).

The majority of Wetland A is an artificially constructed irrigation pond that receives hydrology from upslope natural waters. The location of the pond is at a position either where natural hydrology would have collected, or that intercepts and impounds that natural hydrology. Therefore the irrigation pond portion of Wetland A is regulated as part of the wetland unit, given that the present hydrology is not derived from artificial irrigation sources.

The dominant vegetation within Wetland A was cattail (*Typha latifolia*; OBL). A mix of other hydric vegetation species are sporadically present in lower densities. All of the dominant species within the wetland have an indicator status of facultative (FAC) or wetter, which meets the hydrophytic vegetation criteria per the Corps Manual and the 2010 Regional Supplement.

Soils within the wetland are generally a black (10YR 2/1) silty clay loam to a depth of at least 18 inches below the surface. Very dark gray (10YR 3/1) and dark brown (7.5YR 3/3) redoximorphic features are present starting at 7 inches below the surface. Soil colors were determined with Munsell soil color charts. These soil conditions meet the Redox Dark Surface (F6) wetland soil indicator.

Sampled soils were saturated to the surface at the time of investigation, meeting the Saturation (A3) wetland hydrology indicator. The Geomorphic Position (D2) wetland hydrology secondary indicator is also met.

Given that the area identified as Wetland A has a hydrophytic vegetative community present and meets soil and hydrology wetland indicators, this area meets the definition of a wetland.

### 2.3.2 Wetland B

**Rating:** Category IV

**Size:** Approximately 2,349 S.F. (~0.05 acres)

**Cowardin Classification:**

- Palustrine, Emergent, Persistent, Permanently Flooded (PEM1H)

**HGM Class:** Slope

**Recommended Buffer:** None (does not meet size requirement of KCC 17A.04.020)

Wetland B receives 13 total points based on functions. Wetlands that score between 9 and 15 total points are rated as Category IV. Wetlands of this category typically receive buffers up to 25 feet wide depending on several site and project considerations (per KCC 17.04.020).

Wetland B is a small, linear slope wetland present between Wetland A and C. The hydrology of this wetland is sourced from the outlet of Wetland C, and is subsequently transported across and through the surface of Wetland B to its northern terminus where it outlets into Wetland A.

This linear wetland does not meet the definition of a stream according to WAC 222-16-030, which is the adopted system of Kittitas County. As such, this area is not riparian habitat as defined by KCC 17A.02.250 or 17A.07.010.

The dominant vegetation within Wetland B was cattail (*Typha latifolia*; OBL). Several other hydric vegetation species are sporadically present along the hill slope in lower densities. All of the dominant species within the wetland have an indicator status of facultative (FAC) or wetter, which meets the hydrophytic vegetation criteria per the Corps Manual and the 2010 Regional Supplement.

Soils within the wetland are generally a greenish black (10Y 2.5/1) silty clay loam to a depth of at least 16 inches below the surface, with dark yellowish brown (10YR 3/4) redoximorphic features. These soil conditions meet the Redox Dark Surface (F6) wetland soil indicator.

The water table was at the surface at the time of investigation, meeting both the High Water Table (A2) and Saturation (A3) wetland hydrology indicators.

Given that the area identified as Wetland B has a hydrophytic vegetative community present and meets soil and hydrology wetland indicators, this area meets the definition of a wetland.

### 2.3.3 Wetland C

**Rating:** Category III

**Size:** Approximately ~32.045 (~0.74 acre)

**Cowardin Classification:**

- Palustrine, Emergent, Persistent, Permanently Flooded (PEM1H)
- Palustrine, Aquatic Bed, Permanently Flooded (PABH)

**HGM Class:** Depressional

**Recommended Buffer:** 50 feet

Wetland A receives 18 total points based on functions. Wetlands that score between 16 and 18 total points are rated as Category III. Wetlands of this category typically receive buffers 20 to 80 feet wide depending on several site and project considerations (per KCC 17.04.020).

Wetland C is a relatively large depressional wetland that has developed from natural surface hydrology stemming from an upslope spring to the east. As is the case with Wetland A, this wetland has been modified in the past to serve an irrigation function through construction of an irrigation pond in its westernmost portion. Thus, the hydroperiod of this constructed area has been altered to a permanently flooded condition versus the saturated state of the rest of the wetland. Hydrology outlets from both the irrigation pond and saturated portions of the wetland into Wetland B.

Dominant vegetation within Wetland C consists of Scouler's Willow (*Salix scouleriana*; FAC) and lemmon's willow (*Salix lemmonii*; FACW). All of the dominant species within the wetland have an indicator status of facultative (FAC) or wetter, which meets the hydrophytic vegetation criteria per the Corps Manual and the 2010 Regional Supplement.

Soils within the wetland are generally a black (10YR 2/1) silt loam to a depth of at least 18 inches below the surface. Yellowish brown (10YR 5/4) and dark brown (7.5YR 3/4) redoximorphic features are present starting at 4 inches below the surface. These soil conditions meet the Redox Dark Surface (F6) wetland soil indicator.

Sampled soils were saturated to a depth of 5 inches at the time of investigation, meeting the Saturation (A3) wetland hydrology indicator. The Geomorphic Position (D2) wetland hydrology secondary indicator is also met.

Given that the area identified as Wetland C has a hydrophytic vegetative community present and meets soil and hydrology wetland indicators, this area meets the definition of a wetland.

### **2.3.4 Hydric Area D**

An area referred to as "Hydric Area D" within this report has formed at the base of a slope on top of which the irrigation pond portion of Wetland C is perched. The sloped area separating Wetland C and Hydric Area D has upland conditions and clearly does not meet wetland criteria. The hydrologic source that has formed Hydric Area D is seepage from the irrigation pond above. Although this pond is part of Wetland C, the artificial construction of this irrigation feature within Wetland C significantly changed the hydroperiod from a saturated only condition to one of being permanent flooded. The artificially induced permanently flooded condition of the pond has created seepage that is intrinsic to the irrigation properties of the constructed pond. As detailed in KCC 17A.02.310, seepage is a reasonable and expected result inherent to such irrigation systems, and conditions formed from this hydrology do not constitute a wetland under the KCC. As the hydrology that has created the conditions within Hydric Area D are present only due to construction of a historic irrigation feature, and no surface water connection to this area exists, the area referred to as Hydric Area D is not a regulated wetland in Kittitas County.

### 2.3.5 Non-wetland Site Conditions

Dominant vegetation adjacent to wetland areas is represented by a mix of facultative grasses and woody plant species. Species such as wood-sorrel (*Oxalis* spp.; FACU), bent grass (*Agrostis* spp.; FAC), oxeye daisy (*Leucanthemum vulgare*; UPL), and willows (*Salix* spp.; FAC) create a vegetative matrix that meets hydrophytic indicators in some areas.

Typical soils on the subject site are very dark brown (10YR 2/2) to dark brown (10YR 3/2) silty clay loam and sandy loam. in the upper 8 inches of the soil profile and dark yellowish brown (10YR 3/4) sandy loam between 8 and 18 inches in depth. No redoximorphic features were observed. This soil profile does not meet any hydric soil indicators.

Indicators of wetland hydrology were not observed on the subject property. All sampled soils were dry at the time of investigation. Redoximorphic features were not observed outside of wetland areas. These soil conditions do not meet any hydric indicators.

Soils were dry to slightly moist during our March 2018 site investigation, which does not meet wetland hydrology indicators. Given the lack of wetland soil and hydrology, the facultative vegetation areas that exist outside of the delineated wetlands are not hydrophytic. Areas identified as non-wetland do not meet wetland criteria.

## 2.4 WILDLIFE

The subject site provides low to moderate habitat functions. This property has been significantly degraded through past agricultural practices. Soils near wetlands A and B have been highly disturbed with past fill and construction activities. Forested vegetation was removed to create fields for livestock, and due to the low to moderate structural diversity on the subject site, overall wildlife use is limited.

The following are typical avian species that may utilize this habitat: American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), Black-capped Chickadee (*Poecile atricapillus*), Common Raven (*Corvus corax*), Dark-eyed Junco (*Junco hyemalis*), Pacific Wren (*Troglodytes pacificus*), Song Sparrow (*Melospiza melodia*), and Steller's Jay (*Cyanocitta stelleri*). Mammalian species that may utilize this site include: deer mice (*Peromyscus maniculatus*), eastern cottontail rabbits (*Sylvilagus floridanus*), moles (*Scapanus* spp.), raccoons (*Procyon lotor*), shrews (*Sorex* spp.), skunks (*Mephitis* spp.), squirrels (*Sciurus griseus*, *Sciurus carolinensis*, *Tamiasciurus douglasii*), black-tailed deer (*Odocoileus hemionus columbianus*), and Virginia opossums (*Didelphis virginiana*). This list is not intended to be all-inclusive, and may omit some bird, mammal, or amphibian species that utilize the site.

As discussed in section 2.1, although habitat for both Northern Spotted Owl (*Strix occidentalis*) and gray wolf (*Canis lupis*) are depicted, these broad expanses are “masked areas” intended to keep the locations of these species intentionally vague. Given the highly disturbed site conditions present on the subject parcels, habitat for these species is not present. The subject site lacks important life history requirements necessary for these species (such as large tracts of old growth coniferous forest). Additionally, the Yakima River and several major roads (including Interstate 90) lie between the subject property and the vast majority of the masked area.

Mule deer habitat is mapped in the investigation area. Evidence of some use by deer species was observed on the site during the investigation. However, mule deer are not a species of concern. They are not threatened or endangered at the state or federal level.

Given the lack of endangered, threatened, or sensitive priority species use of the property, no priority species habitat is present as defined in KCC 17A.07.020.

### **3.0 RECOMMENDED CRITICAL AREA PROTECTIONS**

#### **3.1 DETERMINATION OF RECOMMENDED BUFFER WIDTHS**

In Kittitas County, wetlands of certain category and size receive a buffer width falling within a given range. These ranges are stipulated in KCC 17A.04.025, which are provided below:

<b>Category</b>	<b>Size of Wetland</b>	<b>Required Buffer</b>
I	any size	50 – 200 feet
II	Over 2,000 sq. ft.	25 – 100 feet
III	Over 10,000 sq. ft.	20 – 80 feet
IV	43,560 sq. ft. (1 acre)	Building setbacks will be determined by the zoning lot line setbacks, but shall not exceed 25 feet.

The specific width of a wetland buffer is dependent upon several site and project considerations. These considerations, which are enumerated in KCC 17A.04.025, have been used to determine recommended buffer widths. Discussion of these width determinations are provided below for each wetland.

##### **3.1.1 Wetland A Buffer Width**

As Wetland A has a Category III rating and is over 10,000 square feet, its associated buffer must have a width between 20 and 80 feet. The following considerations (from KCC 17A.04.025) were used to make this determination:

Portions of the KCC are provided in *italics*, with responses provided in normal text underneath.

*The wetland buffer ranges have been established to reflect the impact of certain intense land uses on wetland function and values. The director shall base the buffer size on the following criteria and shall establish the least restrictive width of buffer necessary to account for all of the following considerations:*

- 1. The overall intensity of the proposed use;*

The proposed driveway will be placed near the western edge of this wetland, in an area that is already highly degraded due to past fill and a lack of vegetative cover. Given these conditions, the proposed construction area does not meet the definition of buffer (per KCC 17A.02.050) and does not provide any significant functions for the in-site critical areas. Additionally, the proposed driveway replaces existing access to the site, and is not expected to increase traffic to the area. As such, intensity of the proposed use is considered to be negligible.

*2. The presence of threatened, endangered, or sensitive species;*

As discussed in section 2.4, threatened, endangered, and sensitive species are not expected to use the investigation area as habitat. On-site conditions do not provide life history requirements for the listed species known to use nearby areas. The area west of Wetland A is highly degraded, and does not meet the current definition of buffer. Considering the above, this wetland and its associated buffer are not used by threatened, endangered, or sensitive species.

*3. The site's susceptibility to severe erosion;*

The area adjacent to Wetland A appears relatively stable, and is not steeply sloped. Erosion risk is minimal.

*4. The use of a buffer enhancement plan by the applicant which uses native vegetation or other measures which will enhance the functions and values of the wetland or buffer.*

No such enhancement is proposed. The proposed driveway installation will limit construction activities to an area west of the critical areas that are already highly degraded and do not meet the definition of buffer. No functions or values are being significantly disturbed by the proposed activity.

*Buffer Width Recommendation*

Given the above considerations, we recommend a buffer width equal to half the maximum (80 feet ÷ 2 = 40 feet) for the currently highly disturbed wetland. With enhancement of adjacent buffer conditions, the Wetland A buffer could be reduced to the minimum width (20 feet) due to functional lifts provided by native vegetative structure.

Enhancement is not proposed, thus the buffer will remain at a width of 40 feet. The proposed driveway will avoid the buffer completely, avoiding any impacts.

**3.1.2 Wetland B Buffer Width**

Wetland B has a Category IV rating, but is less than an acre in size. As such, this wetland does not meet the size criteria for a required buffer stipulated in 17A.04.020. Therefore, Wetland B receives no buffer.

**3.1.3 Wetland C Buffer Width**

As Wetland C has a Category III rating and is over 10,000 square feet, its associated buffer must have a width between 20 and 80 feet. The following considerations (from KCC 17A.04.025) were used to make this determination:

Portions of the KCC are provided in *italics*, with responses provided in normal text underneath.

*The wetland buffer ranges have been established to reflect the impact of certain intense land uses on wetland function and values. The director shall base the buffer size on the following criteria and shall establish the least restrictive width of buffer necessary to account for all of the following considerations:*

*1. The overall intensity of the proposed use;*

The proposed driveway will not be constructed adjacent to this wetland. Existing residential conditions will continue to the west of the wetland, maintaining the current intensity of land use. Overall, intensity of land use in this area is low. The area abutting Wetland C is partially degraded due to past land use activities.

*2. The presence of threatened, endangered, or sensitive species;*

As discussed in section 2.4, threatened, endangered, and sensitive species are not expected to use the investigation area as habitat. On-site conditions do not provide life history requirements for the listed species known to use nearby areas. Considering the above, this wetland and its associated buffer are not used by threatened, endangered, or sensitive species.

*3. The site's susceptibility to severe erosion;*

The areas adjacent to Wetland C appear relatively stable. A steeply sloped area is present abutting the southeast corner of this wetland. Erosion risk is relatively low.

*4. The use of a buffer enhancement plan by the applicant which uses native vegetation or other measures which will enhance the functions and values of the wetland or buffer.*

No such enhancement is proposed. The proposed driveway installation will not occur adjacent to this wetland. No functions or values are being significantly disturbed by the proposed activity.

*Buffer Width Recommendation*

Given the above considerations, we recommend a buffer width of 50 feet for this disturbed wetland. The wetland is disturbed, but to a lesser degree than Wetland A. With enhancement of buffer conditions, the Wetland C buffer could be reduced to 30 feet due to functional lifts provided by native vegetative structure.

Enhancement is not proposed, thus the buffer will remain at a width of 50 feet. The proposed driveway will avoid the buffer completely, avoiding any impacts.



#### **4.0 USE OF THIS REPORT**

This Critical Area Study is supplied to Chimpanzee Sanctuary NW, as a means of determining the presence of on-site wetlands, lakes, and streams, as well as to determine appropriate critical area buffer widths, as required by Kittitas County during the permitting process. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions. The laws applicable to environmentally critical features are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

*Wetland Resources, Inc.*



Scott Walters, PWS  
*Associate Wetland Ecologist  
& Wildlife Biologist*

## 5.0 REFERENCES

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# **APPENDIX A**

US ARMY CORPS OF ENGINEERS  
WETLAND DETERMINATION DATA FORMS

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 25351 Hwy 10 City/County: Cle Elum Sampling Date: 3/22/18  
 Applicant/Owner: Chimpanzee Sanctuary NW State: WA Sampling Point: S1  
 Investigator(s): S. Walters & J. Mallahan Section, Township, Range: S11, T19, R16E W.M.  
 Landform (hillslope, terrace, etc.): depression and hillslope Local relief (concave, convex, none): concave Slope (%): varies  
 Subregion (LRR): LRR-A Lat: 47.1578612 Long: -120.8055295 Datum: NAD83  
 Soil Map Unit Name: Swauk-Qualla complex, 5 - 15% NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Inside Wetland A	

### VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>5m<sup>2</sup></u> )				
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. <u>Symphoricarpos alba*</u>	<u>20</u>	<u>N</u>	<u>FACU</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B)  Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<b>Herb Stratum</b> (Plot size: <u>1m<sup>2</sup></u> )				
1. <u>Cirsium arvense*</u>	<u>75</u>	<u>N</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Typha latifolia</u>	<u>45</u>	<u>Y</u>	<u>OBL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<b>Woody Vine Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>55</u>				
_____ = Total Cover				

Remarks:  
 \*Not rooted within wetland

**SOIL**

Sampling Point: S1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-7	10YR 2/1	100					Silty Clay Loam	
7-18	10YR 2/1	60	10YR 3/1	30	C	M	Silty Clay Loam	
-	-	-	7.5YR 3/3	10	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)  
 Red Parent Material (TF2)  
 Very Shallow Dark Surface (TF12)  
 Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (2 or more required)</b>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): Surface	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 25351 Hwy 10 City/County: Cle Elum Sampling Date: 3/22/18  
 Applicant/Owner: Chimpanzee Sanctuary NW State: WA Sampling Point: S2  
 Investigator(s): S. Walters & J. Mallahan Section, Township, Range: S11, T19, R16E W.M.  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): >5%  
 Subregion (LRR): LRR-A Lat: 47.1578612 Long: -120.8055295 Datum: NAD83  
 Soil Map Unit Name: Swauk-Qualla complex, 5 - 15% NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Outside of Wetland A	

### VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>5m<sup>2</sup></u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B)  Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>1m<sup>2</sup></u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Cirsium arvense</u>	<u>85</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>85</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>15</u>				
Remarks:				



## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 25351 Hwy 10 City/County: Cle Elum Sampling Date: 3/22/18  
 Applicant/Owner: Chimpanzee Sanctuary NW State: WA Sampling Point: S3  
 Investigator(s): S. Walters & J. Mallahan Section, Township, Range: S11, T19, R16E W.M.  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <5%  
 Subregion (LRR): LRR-A Lat: 47.1578612 Long: -120.8055295 Datum: NAD83  
 Soil Map Unit Name: Swauk-Qualla complex, 5 - 15% NWI classification: PUBHh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Outside of Wetland C	

### VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>5m<sup>2</sup></u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B)  Prevalence Index = B/A = _____
1. <u>Salix lemmonii</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Salix scouleriana</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>55</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>1m<sup>2</sup></u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>% Bare Ground in Herb Stratum</b> <u>100</u>				

Remarks:



**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site: 25351 Hwy 10 City/County: Cle Elum Sampling Date: 3/22/18  
 Applicant/Owner: Chimpanzee Sanctuary NW State: WA Sampling Point: S4  
 Investigator(s): S. Walters & J. Mallahan Section, Township, Range: S11, T19, R16E W.M.  
 Landform (hillslope, terrace, etc.): depression and hillslope Local relief (concave, convex, none): concave Slope (%): varies  
 Subregion (LRR): LRR-A Lat: 47.1578612 Long: -120.8055295 Datum: NAD83  
 Soil Map Unit Name: Swauk-Qualla complex, 5 - 15% NWI classification: PUBHh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Inside of Wetland C	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>5m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. <u>Salix scouleriana</u>	<u>55</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Salix lemmonii</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>85</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>1m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>% Bare Ground in Herb Stratum</b> <u>100</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL species \_\_\_\_\_ x 1 = 0  
 FACW species \_\_\_\_\_ x 2 = 0  
 FAC species \_\_\_\_\_ x 3 = 0  
 FACU species \_\_\_\_\_ x 4 = 0  
 UPL species \_\_\_\_\_ x 5 = 0  
 Column Totals: 0 (A) 0 (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

**SOIL**

Sampling Point: S4

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/1	100					Sandy Clay Loam	
4-18+	10YR 2/1	94	10YR 5/4	3	C	M	Sandy Clay Loam	
-	-	-	7.5YR 3/4	3	C	M	Sandy Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>except MLRA 1</b> )	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)  
 Red Parent Material (TF2)  
 Very Shallow Dark Surface (TF12)  
 Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (2 or more required)</b>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> ) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> ) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2, 4A, and 4B</b> ) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> ) <input type="checkbox"/> Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present?    Yes     No     Depth (inches): \_\_\_\_\_

Water Table Present?    Yes     No     Depth (inches): \_\_\_\_\_

Saturation Present?    Yes     No     Depth (inches): 5  
 (includes capillary fringe)

**Wetland Hydrology Present?**    Yes     No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 25351 Hwy 10 City/County: Cle Elum Sampling Date: 3/22/18  
 Applicant/Owner: Chimpanzee Sanctuary NW State: WA Sampling Point: S5  
 Investigator(s): S. Walters & J. Mallahan Section, Township, Range: S11, T19, R16E W.M.  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): >5%  
 Subregion (LRR): LRR-A Lat: 47.1578612 Long: -120.8055295 Datum: NAD83  
 Soil Map Unit Name: Swauk-Qualla complex, 5 - 15% NWI classification: PUBHh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Outside of Wetland B	

### VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>5m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>1m<sup>2</sup></u> )				
1. <u>Agrostis spp.</u>	<u>55</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Leucanthemum vulgare</u>	<u>45</u>	<u>Y</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>% Bare Ground in Herb Stratum</b> _____				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL species \_\_\_\_\_ x 1 = 0  
 FACW species \_\_\_\_\_ x 2 = 0  
 FAC species 55 x 3 = 165  
 FACU species \_\_\_\_\_ x 4 = 0  
 UPL species 45 x 5 = 225  
 Column Totals: 100 (A) 390 (B)  
 Prevalence Index = B/A = 3.9

**Hydrophytic Vegetation Indicators:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

**SOIL**

Sampling Point: S5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-11	10YR 3/2	100					Silty Clay Loam	
11-16+	2.5YR 3/2	100					Silty Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Histosol (A1)</td> <td><input type="checkbox"/> Sandy Redox (S5)</td> </tr> <tr> <td><input type="checkbox"/> Histic Epipedon (A2)</td> <td><input type="checkbox"/> Stripped Matrix (S6)</td> </tr> <tr> <td><input type="checkbox"/> Black Histic (A3)</td> <td><input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)</td> </tr> <tr> <td><input type="checkbox"/> Hydrogen Sulfide (A4)</td> <td><input type="checkbox"/> Loamy Gleyed Matrix (F2)</td> </tr> <tr> <td><input type="checkbox"/> Depleted Below Dark Surface (A11)</td> <td><input type="checkbox"/> Depleted Matrix (F3)</td> </tr> <tr> <td><input type="checkbox"/> Thick Dark Surface (A12)</td> <td><input type="checkbox"/> Redox Dark Surface (F6)</td> </tr> <tr> <td><input type="checkbox"/> Sandy Mucky Mineral (S1)</td> <td><input type="checkbox"/> Depleted Dark Surface (F7)</td> </tr> <tr> <td><input type="checkbox"/> Sandy Gleyed Matrix (S4)</td> <td><input type="checkbox"/> Redox Depressions (F8)</td> </tr> </table>	<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> 2 cm Muck (A10)</td> </tr> <tr> <td><input type="checkbox"/> Red Parent Material (TF2)</td> </tr> <tr> <td><input type="checkbox"/> Very Shallow Dark Surface (TF12)</td> </tr> <tr> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> </table> <p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>	<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Red Parent Material (TF2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	<input type="checkbox"/> Other (Explain in Remarks)
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<input type="checkbox"/> Other (Explain in Remarks)																					

<p><b>Restrictive Layer (if present):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p><b>Hydric Soil Present?</b>    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/></p>
<p>Remarks:</p>	

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td> </tr> <tr> <td><input type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Salt Crust (B11)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Aquatic Invertebrates (B13)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Surface Soil Cracks (B6)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td> <td></td> </tr> </table>		<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<p>Secondary Indicators (2 or more required)</p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</td> </tr> <tr> <td><input type="checkbox"/> Drainage Patterns (B10)</td> </tr> <tr> <td><input type="checkbox"/> Dry-Season Water Table (C2)</td> </tr> <tr> <td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><input type="checkbox"/> Geomorphic Position (D2)</td> </tr> <tr> <td><input type="checkbox"/> Shallow Aquitard (D3)</td> </tr> <tr> <td><input type="checkbox"/> FAC-Neutral Test (D5)</td> </tr> <tr> <td><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Frost-Heave Hummocks (D7)</td> </tr> </table>	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
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<p><b>Field Observations:</b></p> <p>Surface Water Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (inches): _____</p> <p>Water Table Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (inches): _____</p> <p>Saturation Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (inches): _____          (includes capillary fringe)</p>	<p><b>Wetland Hydrology Present?</b>    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/></p>																																
<p>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</p>																																	
<p>Remarks:</p>																																	



# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 25351 Hwy 10 City/County: Cle Elum Sampling Date: 3/22/18  
 Applicant/Owner: Chimpanzee Sanctuary NW State: WA Sampling Point: S6  
 Investigator(s): S. Walters & J. Mallahan Section, Township, Range: S11, T19, R16E W.M.  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): >5%  
 Subregion (LRR): LRR-A Lat: 47.1578612 Long: -120.8055295 Datum: NAD83  
 Soil Map Unit Name: Swauk-Qualla complex, 5 - 15% NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Inside of Wetland B	

## VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>5m<sup>2</sup></u> )				
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover	<u>0</u>			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B)  Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<b>Herb Stratum</b> (Plot size: <u>1m<sup>2</sup></u> )				
1. <u>Typha latifolia</u>	_____	<u>Y</u>	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<b>Woody Vine Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum _____ = Total Cover <u>0</u>				

Remarks:

**SOIL**

Sampling Point: S6

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-16	10Y 2.5/1	85	10YR 3/4	15	C	M	Silty Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)  
 Red Parent Material (TF2)  
 Very Shallow Dark Surface (TF12)  
 Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (2 or more required)</b>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>Surface</u>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>Surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site: 25351 Hwy 10 City/County: Cle Elum Sampling Date: 3/22/18  
 Applicant/Owner: Chimpanzee Sanctuary NW State: WA Sampling Point: S7  
 Investigator(s): S. Walters & J. Mallahan Section, Township, Range: S11, T19, R16E W.M.  
 Landform (hillslope, terrace, etc.): base of slope Local relief (concave, convex, none): none Slope (%): ~1%  
 Subregion (LRR): LRR-A Lat: 47.1578612 Long: -120.8055295 Datum: NAD83  
 Soil Map Unit Name: Swauk-Qualla complex, 5 - 15% NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Inside of Hydric Area D, grasses were mowed making them impossible to identify.	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>5m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>1m<sup>2</sup></u> )				
1. <u>Agrostis sp.</u>	<u>100</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	_____	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum _____				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL species \_\_\_\_\_ x 1 = 0  
 FACW species \_\_\_\_\_ x 2 = 0  
 FAC species \_\_\_\_\_ x 3 = 0  
 FACU species \_\_\_\_\_ x 4 = 0  
 UPL species \_\_\_\_\_ x 5 = 0  
 Column Totals: 0 (A) 0 (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:  
 \*Unidentified grasses assumed to be FAC

**SOIL**

Sampling Point: S7

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-6	10YR 2/1	100					Clay Loam	
6-18+	10YR 2/1	94	10YR 3/2	6	C	M	Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>except MLRA 1</b> )	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)  
 Red Parent Material (TF2)  
 Very Shallow Dark Surface (TF12)  
 Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>	<b>Secondary Indicators (2 or more required)</b>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>except MLRA 1, 2, 4A, and 4B</b> ) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) ( <b>LRR A</b> ) <input type="checkbox"/> Other (Explain in Remarks)

<input type="checkbox"/> Water-Stained Leaves (B9) ( <b>MLRA 1, 2, 4A, and 4B</b> ) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) ( <b>LRR A</b> ) <input type="checkbox"/> Frost-Heave Hummocks (D7)	<p><b>Field Observations:</b></p> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>Surface</u> Saturation Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>Surface</u> (includes capillary fringe)
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**Wetland Hydrology Present?**    Yes     No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 25351 Hwy 10 City/County: Cle Elum Sampling Date: 3/22/18  
 Applicant/Owner: Chimpanzee Sanctuary NW State: WA Sampling Point: S8  
 Investigator(s): S. Walters & J. Mallahan Section, Township, Range: S11, T19, R16E W.M.  
 Landform (hillslope, terrace, etc.): relatively flat Local relief (concave, convex, none): none Slope (%): <5%  
 Subregion (LRR): LRR-A Lat: 47.1578612 Long: -120.8055295 Datum: NAD83  
 Soil Map Unit Name: Swauk-Qualla complex, 5 - 15% NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Outside of Hydric Area D	

## VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>5m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>1m<sup>2</sup></u> )				
1. <u>Oxalis sp.</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Pasture Grasses*</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Plantago lanceolata</u>	<u>40</u>	<u>N</u>	<u>FACU</u>	
4. <u>Trifolium sp.</u>	<u>30</u>	<u>N</u>	<u>FAC</u>	
5. <u>Cirsium vulgare</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
6. <u>Digitalis purpurea</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>230</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>3m<sup>2</sup></u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>% Bare Ground in Herb Stratum</b> <u>0</u>				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 90 x 3 = 270  
 FACU species 140 x 4 = 560  
 UPL species \_\_\_\_\_ x 5 = 0  
 Column Totals: 230 (A) 830 (B)  
 Prevalence Index = B/A = 3.6

**Hydrophytic Vegetation Indicators:**  
 Rapid Test for Hydrophytic Vegetation  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Wetland Non-Vascular Plants<sup>1</sup>  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:



## **APPENDIX B**

WASHINGTON DEPARTMENT OF ECOLOGY WETLAND RATING FORM

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Wetland name or number A

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland A Date of site visit: March 22, 2018  
 Rated by S. Brainard Trained by Ecology?  Yes  No Date of training June 2015

HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI World Imagery

**OVERALL WETLAND CATEGORY III** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	<input checked="" type="checkbox"/> M	L	<input checked="" type="checkbox"/> H	M	L	H	<input checked="" type="checkbox"/> M	L	
Landscape Potential	H	M	<input checked="" type="checkbox"/> L	H	<input checked="" type="checkbox"/> M	L	<input checked="" type="checkbox"/> H	M	L	
Value	H	M	<input checked="" type="checkbox"/> L	H	M	<input checked="" type="checkbox"/> L	<input checked="" type="checkbox"/> H	M	L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>4</b>			<b>6</b>			<b>8</b>			<b>18</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
<b>Vernal Pools</b>	<input checked="" type="checkbox"/> II	<input type="checkbox"/> III
<b>Alkali</b>	<input checked="" type="checkbox"/> I	
<b>Wetland of High Conservation Value</b>	<input checked="" type="checkbox"/> I	
<b>Bog and Calcareous Fens</b>	<input checked="" type="checkbox"/> I	
<b>Old Growth or Mature Forest – slow growing</b>	<input checked="" type="checkbox"/> I	
<b>Aspen Forest</b>	<input checked="" type="checkbox"/> I	
<b>Old Growth or Mature Forest – fast growing</b>	<input checked="" type="checkbox"/> II	
<b>Floodplain forest</b>	<input checked="" type="checkbox"/> II	
None of the above		

Wetland name or number A

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	A1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	A1
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	A1
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	A1
Map of the contributing basin	D 5.3	A2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	A2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	A3
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	A3

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

Wetland name or number A

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**  **YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

**NO - go to 3**  **YES - The wetland class is **Slope****  
**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

**NO - go to 4**  **YES - The wetland class is **Riverine****  
**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**  **YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number A

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating	
Slope + Riverine	Riverine	<input type="radio"/>
Slope + Depressional	<input type="checkbox"/> Depressional	<input checked="" type="radio"/>
Slope + Lake Fringe	Lake Fringe	<input type="radio"/>
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional	<input type="radio"/>
Depressional + Lake Fringe	Depressional	<input type="radio"/>
Riverine + Lake Fringe	Riverine	<input type="radio"/>

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number A**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:

- Wetland has no surface water outlet points = 5
- Wetland has an intermittently flowing outlet points = 3
- Wetland has a highly constricted permanently flowing outlet points = 3
- Wetland has a permanently flowing, unconstricted, surface outlet points = 1

**5**D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils) YES = 3  NO = 0 **0**

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- Wetland has persistent, ungrazed, vegetation for  $> \frac{2}{3}$  of area points = 5
- Wetland has persistent, ungrazed, vegetation from  $\frac{1}{3}$  to  $\frac{2}{3}$  of area points = 3
- Wetland has persistent, ungrazed vegetation from  $\frac{1}{10}$  to  $< \frac{1}{3}$  of area points = 1
- Wetland has persistent, ungrazed vegetation  $< \frac{1}{10}$  of area points = 0

**3**

D 1.4. Characteristics of seasonal ponding or inundation:

*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

- Area seasonally ponded is  $> \frac{1}{2}$  total area of wetland points = 3
- Area seasonally ponded is  $\frac{1}{4}$  -  $\frac{1}{2}$  total area of wetland points = 1
- Area seasonally ponded is  $< \frac{1}{4}$  total area of wetland points = 0

**0**

Total for D 1

Add the points in the boxes above

**8****Rating of Site Potential** If score is:  12- 16 = H  6- 11 = M  0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland receive stormwater discharges?

 Yes = 1  No = 0 **0**D 2.2. Is  $> 10\%$  of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1  No = 0 **0**

D 2.3. Are there septic systems within 250 ft of the wetland?

 Yes = 1  No = 0 **0**

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions

D 2.1- D 2.3? Source \_\_\_\_\_

 Yes = 1  No = 0 **0**

Total for D 2

Add the points in the boxes above

**0****Rating of Landscape Potential** If score is:  3 or 4 = H  1 or 2 = M  0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?

 Yes = 1  No = 0 **0**

D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?

 Yes = 1  No = 0 **0**

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?

 Yes = 2  No = 0 **0**

Total for D 3

Add the points in the boxes above

**0****Rating of Value** If score is:  2-4 = H  1 = M  0 = L

Record the rating on the first page

**Comments:** Areas surrounding the wetland are rated based on their current level of land use as directed by the rating system, which may not appear consistent with aerial imagery of the investigation area.


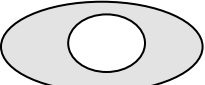

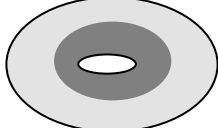
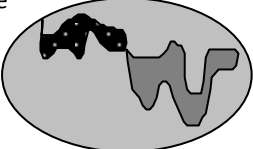
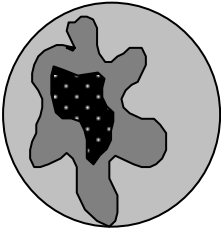
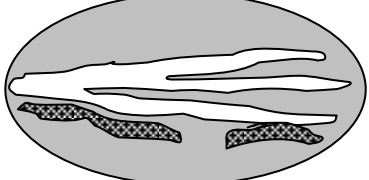
Wetland name or number A

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> <input checked="" type="checkbox"/> Wetland has no surface water outlet <span style="float: right;">points = 8</span> <input type="checkbox"/> Wetland has an intermittently flowing outlet <span style="float: right;">points = 4</span> <input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet <span style="float: right;">points = 4</span> <input type="checkbox"/> Wetland has a permanently flowing unconfined surface outlet <span style="float: right;">points = 0</span> <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>	<b>8</b>	
D 4.2. <u>Depth of storage during wet periods:</u> <i>Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</i> <input type="checkbox"/> Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 8</span> <input checked="" type="checkbox"/> Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 6</span> <input type="checkbox"/> The wetland is a headwater wetland <span style="float: right;">points = 4</span> <input type="checkbox"/> Seasonal ponding: 1 ft - < 2 ft <span style="float: right;">points = 4</span> <input type="checkbox"/> Seasonal ponding: 6 in - < 1 ft <span style="float: right;">points = 2</span> <input type="checkbox"/> Seasonal ponding: < 6 in or wetland has only saturated soils <span style="float: right;">points = 0</span>	<b>6</b>	
Total for D 4		Add the points in the boxes above <b>14</b>
<b>Rating of Site Potential</b> If score is: <input checked="" type="checkbox"/> 12-16 = H <input type="checkbox"/> 6-11 = M <input type="checkbox"/> 0-5 = L <span style="float: right;"><i>Record the rating on the first page</i></span>		

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	<input type="checkbox"/> Yes = 1	<input type="checkbox"/> No = 0 <input checked="" type="checkbox"/> 0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	<input checked="" type="checkbox"/> Yes = 1	<input type="checkbox"/> No = 0 <input type="checkbox"/> 1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	<input type="checkbox"/> Yes = 1	<input type="checkbox"/> No = 0 <input checked="" type="checkbox"/> 0
Total for D 5		Add the points in the boxes above <b>1</b>
<b>Rating of Landscape Potential</b> If score is: <input type="checkbox"/> 3 = H <input checked="" type="checkbox"/> 1 or 2 = M <input type="checkbox"/> 0 = L <span style="float: right;"><i>Record the rating on the first page</i></span>		

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND <input type="checkbox"/> Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> <input checked="" type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> <u>Wetland has no outlet, and its hydrology is constrained to the localized area.</u> <span style="float: right;">points = 0</span> <input type="checkbox"/> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>	<b>0</b>	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	<input type="checkbox"/> Yes = 2	<input type="checkbox"/> No = 0 <input checked="" type="checkbox"/> 0
Total for D 6		Add the points in the boxes above <b>0</b>
<b>Rating of Value</b> If score is: <input type="checkbox"/> 2-4 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L <span style="float: right;"><i>Record the rating on the first page</i></span>		

Wetland name or number A

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input checked="" type="checkbox"/> Aquatic bed</p> <p><input type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)      4 or more checks: points = 3</p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)      3 checks: points = 2</p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>	<b>1</b>	
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;"><input checked="" type="checkbox"/> Yes = 1   No = 0 <input type="checkbox"/></span>	<b>1</b>	
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;"><input checked="" type="checkbox"/> Yes = 3 points &amp; go to H 1.4   No = go to H 1.3.2 <input type="checkbox"/></span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;"><input type="checkbox"/> Yes = 3   No = 0 <input checked="" type="checkbox"/></span></p>	<b>3</b>	
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species _____</p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2 <input type="checkbox"/></p> <p style="text-align: right;">4-9 species: points = 1 <input checked="" type="checkbox"/></p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0 <input type="checkbox"/></p>	<b>1</b>	
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p><input type="checkbox"/> <b>None</b> = 0 points</p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> <b>Low</b> = 1 point</p> </div> <div style="text-align: center;">  <p><input checked="" type="checkbox"/> <b>Moderate</b> = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <p style="margin-top: 10px;"><input type="checkbox"/> <b>High</b> = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;">    </div> <p style="text-align: right; margin-right: 50px;">Riparian braided channels with 2 classes</p>	Figure__  <b>2</b>	

Wetland name or number A

<b>H 1.6. Special habitat features</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>		
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
<input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.		
<input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		
<input checked="" type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
<input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
<input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )		
<b>Total for H 1</b>		<b>10</b>

**Rating of Site Potential** If score is:  15-18 = H  7-14 = M  0-6 = L Record the rating on the first page

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> <i>Calculate: % undisturbed habitat</i> <u>15</u> <i>+ [(% moderate and low intensity land uses)/2]</i> <u>10</u> <i>=</i> <u>25</u> <i>%</i>		
<input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon	points = 3	
<input checked="" type="checkbox"/> 20-33% of 1km Polygon	points = 2	
<input type="checkbox"/> 10-19% of 1km Polygon	points = 1	
<input type="checkbox"/> <10% of 1km Polygon	points = 0	
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> <i>Calculate: % undisturbed habitat</i> <u>42</u> <i>+ [(% moderate and low intensity land uses)/2]</i> <u>17</u> <i>=</i> <u>59</u> <i>%</i>		
<input checked="" type="checkbox"/> Undisturbed habitat > 50% of Polygon	points = 3	
<input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches	points = 2	
<input type="checkbox"/> Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
<input type="checkbox"/> Undisturbed habitat < 10% of Polygon	points = 0	
<b>H 2.3. Land use intensity in 1 km Polygon:</b>		
<input type="checkbox"/> > 50% of Polygon is high intensity land use	points = (- 2)	
<input checked="" type="checkbox"/> Does not meet criterion above	points = 0	
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b>		
	<input type="checkbox"/> Yes = 3 <input type="checkbox"/> No = 0 <input checked="" type="checkbox"/>	<b>0</b>
<b>Total for H 2</b>		<b>5</b>

**Rating of Landscape Potential** If score is:  4-9 = H  1-3 = M  < 1 = L Record the rating on the first page

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b>		
Site meets ANY of the following criteria:		points = 2
<input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)		
<input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)		
<input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species		
<input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources		
<input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan		
<input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B)	points = 1	
<input type="checkbox"/> Site does not meet any of the criteria above	points = 0	

**Rating of Value** If score is:  2 = H  1 = M  0 = L Record the rating on the first page



Wetland name or number   A  

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<b>Cat. II</b> <b>Cat. III</b>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<b>Cat. I</b>

Wetland name or number   **A**  

<p><b>SC 4.0 Bogs and Calcareous Fens</b> Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b> Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)? Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)? Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b> <i>Choose the highest rating if wetland falls into several categories</i> If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

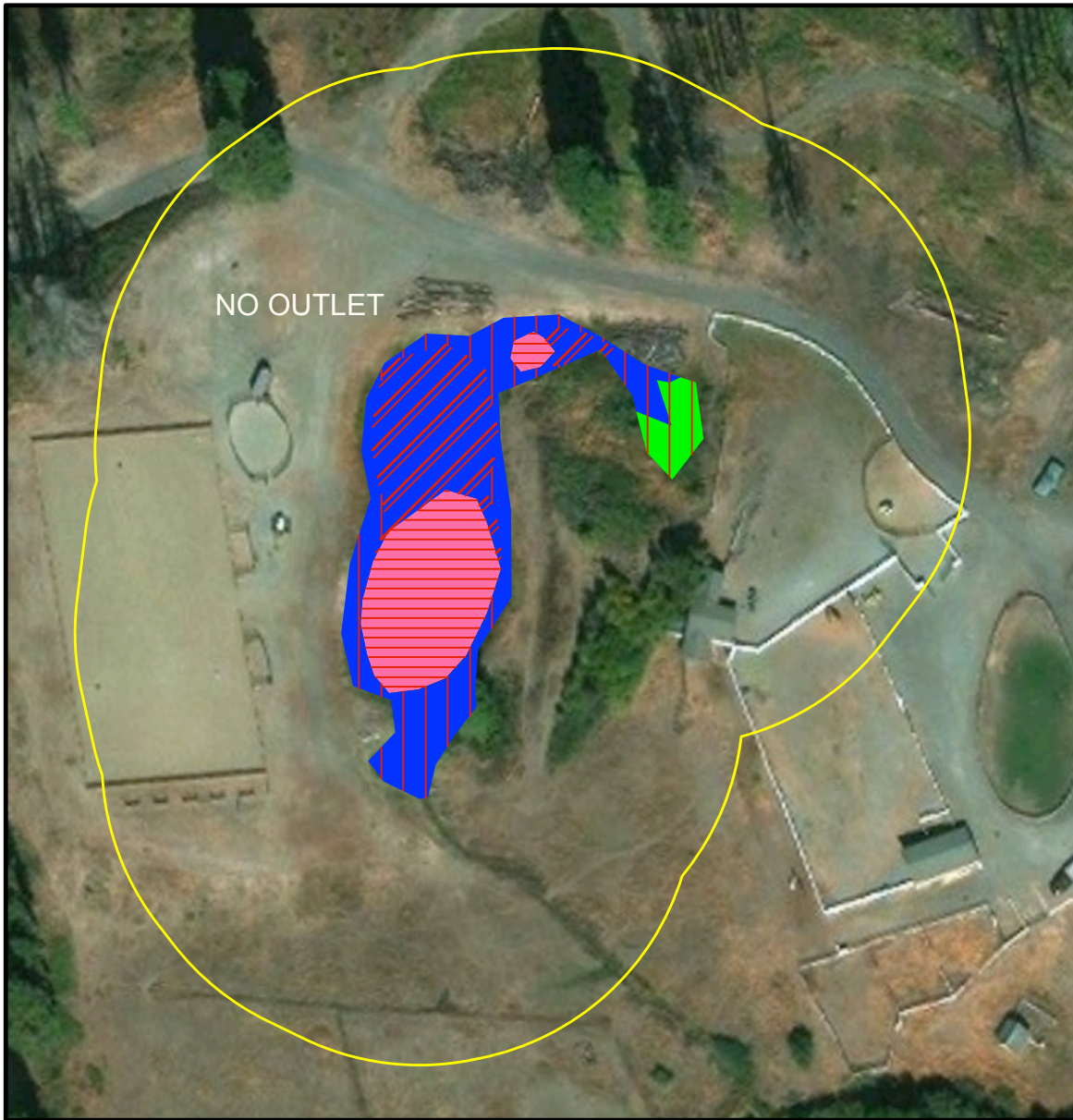
Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

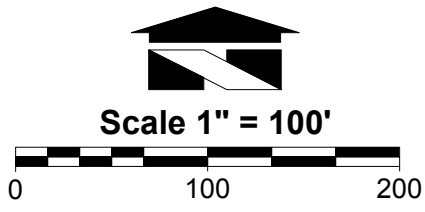
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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CHIMPANZEE SANCTUARY - HWY 10  
 WETLAND RATING FIGURE 1 - WETLAND A



LEGEND	
	SCRUB-SHRUB
	AQUATIC BED
	EMERGENT VEGETATION
	SATURATED ONLY
	SEASONALLY FLOODED
	PERMANENTLY FLOODED
	150' FROM WL BOUNDARY



**Wetland Resources, Inc.**  
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance  
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208  
 Phone: (425) 337-3174  
 Fax: (425) 337-3045  
 Email: mailbox@wetlandresources.com

**WETLAND RATING**  
**Wetland A**

Chimpanzee Sanctuary NW  
 Attn: J. B. Mulcahy  
 PO Box 952  
 Cle Elum, WA 98922

Figure A-1  
 WRI Job # 18059  
 Rated by: EC

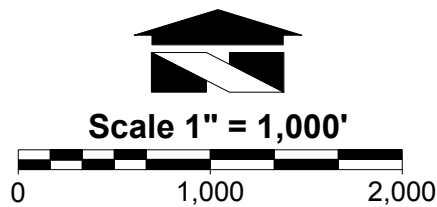
CHIMPANZEE SANCTUARY - HWY 10  
WETLAND RATING FIGURE 2- WETLAND A



**CONTRIBUTING BASIN  
AREA RELATIVE TO  
WETLAND UNIT IS 23:1**

**LEGEND**

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN



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**WETLAND RATING  
Wetland A**

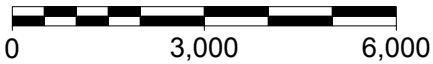
Chimpanzee Sanctuary NW  
 Attn: J. B. Mulcahy  
 PO Box 952  
 Cle Elum, WA 98922

Figure A-2  
 WRI Job # 18059  
 Rated by: EC




CHIMPANZEE SANCTUARY - HWY 10  
 WETLAND RATING FIGURE 3- WETLAND A



Scale 1" = 3,000'



**LEGEND**

-  WETLAND
-  AQUATIC RESOURCES ON THE 303(d) LIST
-  WATERS WITH A TMDL

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 Phone: (425) 337-3174  
 Fax: (425) 337-3045  
 Email: mailbox@wetlandresources.com

**WETLAND RATING**  
**Wetland A**

Chimpanzee Sanctuary NW  
 Attn: J. B. Mulcahy  
 PO Box 952  
 Cle Elum, WA 98922

Figure A-3  
 WRI Job # 18059  
 Rated by: EC

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Wetland name or number B

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland B Date of site visit: March 22, 2018  
 Rated by S. Brainard Trained by Ecology?  Yes \_\_\_ No Date of training June 2015

HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI World Imagery

**OVERALL WETLAND CATEGORY IV** (based on functions  or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	<input checked="" type="checkbox"/> L	H	M	<input checked="" type="checkbox"/> L	H	M	<input checked="" type="checkbox"/> L	
Landscape Potential	H	M	<input checked="" type="checkbox"/> L	H	M	<input checked="" type="checkbox"/> L	<input checked="" type="checkbox"/> H	M	L	
Value	H	M	<input checked="" type="checkbox"/> L	H	M	<input checked="" type="checkbox"/> L	<input checked="" type="checkbox"/> H	M	L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>3</b>			<b>3</b>			<b>7</b>			<b>13</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
<b>Vernal Pools</b>	<b>II</b>	<b>III</b>
<b>Alkali</b>	<b>I</b>	
<b>Wetland of High Conservation Value</b>	<b>I</b>	
<b>Bog and Calcareous Fens</b>	<b>I</b>	
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>	
<b>Aspen Forest</b>	<b>I</b>	
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>	
<b>Floodplain forest</b>	<b>II</b>	
None of the above		

Wetland name or number B

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	B1
Hydroperiods	H 1.2, H 1.3	B1
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	B5
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	B5
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	B1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	B2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	B3
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	B3

Wetland name or number B

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**  **YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

**NO - go to 3**  **YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

**NO - go to 4**  **YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**  **YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number **B** \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating	
Slope + Riverine	Riverine	<input type="radio"/>
Slope + Depressional	Depressional	<input type="radio"/>
Slope + Lake Fringe	Lake Fringe	<input type="radio"/>
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional	<input type="radio"/>
Depressional + Lake Fringe	Depressional	<input type="radio"/>
Riverine + Lake Fringe	Riverine	<input type="radio"/>

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

### SLOPE WETLANDS

Points  
(only 1  
score per  
box)

**Water Quality Functions** - Indicators that the site functions to improve water quality

**S 1.0. Does the site have the potential to improve water quality?**

S 1.1. Characteristics of average slope of wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*)

- Slope is 1% or less points = 3
- Slope is > 1% - 2% points = 2
- Slope is > 2% - 5% points = 1
- Slope is greater than 5% points = 0

**0**

S 1.2. The soil 2 in below the surface (or duff layer) is true clay or tureorganic (*use NRCS definitio* : Yes = 3  No = 0  **0**

S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:  
Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.*

- Dense, uncut, herbaceous plants > 90% of the wetland area points = 6
- Dense, uncut, herbaceous plants > ½ of area points = 3
- Dense, woody, plants > ½ of area points = 2
- Dense, uncut, herbaceous plants > ¼ of area points = 1
- Does not meet any of the criteria above for plants points = 0

**3**

Total for S 1 Add the points in the boxes above **3**

**Rating of Site Potential** If score is:  12 = H  6-11 = M  0-5 = L *Record the rating on the first page*

**S 2.0. Does the landscape have the potential to support the water quality function at the site?**

S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?  Yes = 1  No = 0  **0**

S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?  
Other sources \_\_\_\_\_  Yes = 1  No = 0  **0**

Total for S 2 Add the points in the boxes above **0**

**Rating of Landscape Potential** If score is:  1-2 = M  0 = L *Record the rating on the first page*

**S 3.0. Is the water quality improvement provided by the site valuable to society?**

S 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (*within 1 mi*)?  Yes = 1  No = 0  **0**

S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.*  Yes = 1  No = 0  **0**

S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the drainage or basin in which wetland is found*)?  Yes = 2  No = 0  **0**

Total for S 3 Add the points in the boxes above **0**

**Rating of Value** If score is:  2-4 = H  1 = M  0 = L *Record the rating on the first page*

**Comments:** Areas surrounding the wetland are rated based on their current level of land use as directed by the rating system, which may not appear consistent with aerial imagery of the investigation area.

Wetland name or number \_\_\_\_\_

### SLOPE WETLANDS

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion

Points  
(only 1  
score per  
box)

S 4.0. Does the site have the potential to reduce flooding and erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.*

- Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1  
 All other conditions points = 0

**0**

**Rating of Site Potential** If score is:  1 = M  0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate excess surface runoff?

- Yes = 1  No = 0

**0**

**Rating of Landscape Potential** If score is:  1 = M  0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:

- The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2  
 Surface flooding problems are in a sub-basin farther down-gradient points = 1  
 No flooding problems anywhere downstream points = 0

S 6.2. Has the site been identified as important for flood storage and flood conveyance in a regional flood control plan?

- Yes = 2  No = 0

**0**

Total for S 6

Add the points in the boxes above


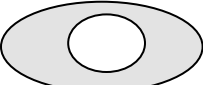
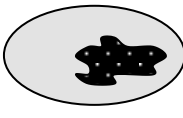
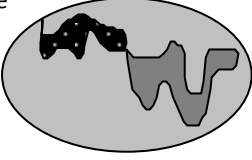
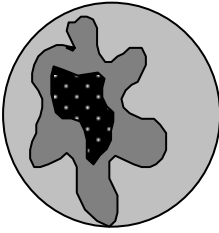
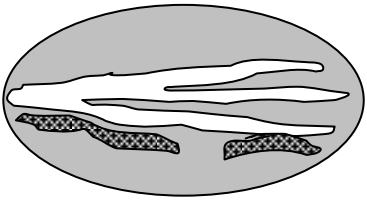
**0**

**Rating of Value** If score is:  2-4 = H  1 = M  0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number **B** \_\_\_\_\_

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:                      Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</p> <p> <input type="checkbox"/> Aquatic bed  <input type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover  <input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover  <input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover  <input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)  <input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)                 </p> <p style="text-align: right;">                     4 or more checks: points = 3                      3 checks: points = 2                      2 checks: points = 1                      1 check: points = 0                 </p>	<p><b>0</b></p>	
<p>H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;"> <input type="checkbox"/> Yes = 1   <input type="checkbox"/> No = 0   <input checked="" type="checkbox"/> </span></p>	<p><b>0</b></p>	
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <b>Answer YES for Lake Fringe wetlands.</b> <span style="float: right;"> <input type="checkbox"/> Yes = 3 points &amp; go to H 1.4   <input type="checkbox"/> No = go to H 1.3.2   <input checked="" type="checkbox"/> </span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <b>Answer yes only if H 1.3.1 is No.</b> <span style="float: right;"> <input type="checkbox"/> Yes = 3   <input type="checkbox"/> No = 0   <input checked="" type="checkbox"/> </span></p>	<p><b>0</b></p>	
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species _____</p> <p style="text-align: right;">                     Scoring: <math>&gt; 9</math> species: points = 2 <input type="checkbox"/>                      4-9 species: points = 1 <input checked="" type="checkbox"/>  <math>&lt; 4</math> species: points = 0 <input type="checkbox"/> </p>	<p><b>1</b></p>	
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p><input checked="" type="checkbox"/> <b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> <b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> <b>Moderate = 2 points</b></p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> <p><input type="checkbox"/> <b>High = 3 points</b></p>  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>	<p>Figure__</p> <p><b>0</b></p>	

Wetland name or number **B** \_\_\_\_\_

<b>H 1.6. Special habitat features</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>		
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
<input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.		
<input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		
<input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
<input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
<input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )		
<b>Total for H 1</b>		<b>1</b>
<b>Rating of Site Potential</b> If score is: <input type="checkbox"/> 15-18 = H <input type="checkbox"/> 7-14 = M <input checked="" type="checkbox"/> 0-6 = L		<b>2</b>

Add the points in the boxes above

**2**

Record the rating on the first page

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> <i>Calculate: % undisturbed habitat</i> <u>15</u> <i>+ [(% moderate and low intensity land uses)/2]</i> <u>10</u> <i>=</i> <u>26</u> <i>%</i>		
<input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon	points = 3	
<input checked="" type="checkbox"/> 20-33% of 1km Polygon	points = 2	
<input type="checkbox"/> 10-19% of 1km Polygon	points = 1	
<input type="checkbox"/> <10% of 1km Polygon	points = 0	
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> <i>Calculate: % undisturbed habitat</i> <u>39</u> <i>+ [(% moderate and low intensity land uses)/2]</i> <u>17</u> <i>=</i> <u>56</u> <i>%</i>		
<input checked="" type="checkbox"/> Undisturbed habitat > 50% of Polygon	points = 3	
<input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches	points = 2	
<input type="checkbox"/> Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
<input type="checkbox"/> Undisturbed habitat < 10% of Polygon	points = 0	
<b>H 2.3. Land use intensity in 1 km Polygon:</b>		
<input type="checkbox"/> > 50% of Polygon is high intensity land use	points = (- 2)	
<input checked="" type="checkbox"/> Does not meet criterion above	points = 0	
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b>		
	<input type="checkbox"/> Yes = 3 <input type="checkbox"/> No = 0 <input checked="" type="checkbox"/>	<b>0</b>
<b>Total for H 2</b>		<b>5</b>

Add the points in the boxes above

**5**

Record the rating on the first page

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b>		
Site meets ANY of the following criteria:		points = 2
<input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)		
<input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)		
<input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species		
<input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources		
<input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan		
<input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B)	points = 1	
<input type="checkbox"/> Site does not meet any of the criteria above	points = 0	
<b>Rating of Value</b> If score is: <input checked="" type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L		<b>4</b>

Record the rating on the first page



Wetland name or number   B  

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<b>Cat. II</b> <b>Cat. III</b>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<b>Cat. I</b>

Wetland name or number **B** \_\_\_\_\_

<p><b>SC 4.0 Bogs and Calcareous Fens</b> Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b> Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)? Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)? Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b> <i>Choose the highest rating if wetland falls into several categories</i> If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

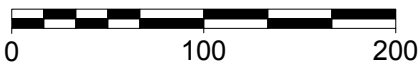
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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CHIMPANZEE SANCTUARY - HWY 10  
WETLAND RATING FIGURE 1 - WETLAND B



Scale 1" = 100'



LEGEND

-  EMERGENT VEGETATION
-  SATURATED ONLY
-  SEASONALLY FLOODED
-  150' FROM WL BOUNDARY

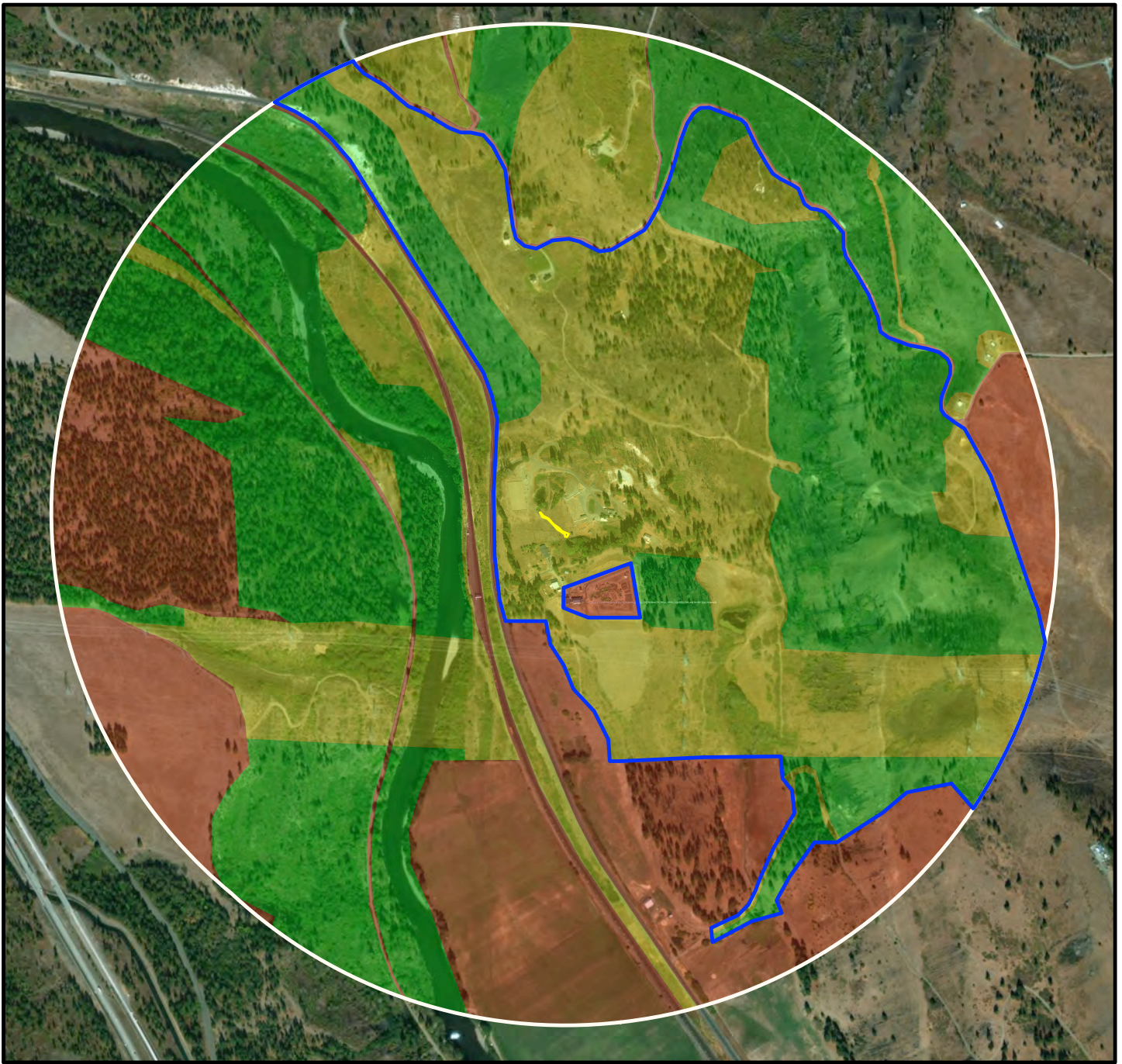
*Wetland Resources, Inc.*  
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance  
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208  
Phone: (425) 337-3174  
Fax: (425) 337-3045  
Email: mailbox@wetlandresources.com

**WETLAND RATING**  
**Wetland B**

Chimpanzee Sanctuary NW  
Attn: J. B. Mulcahy  
PO Box 952  
Cle Elum, WA 98922


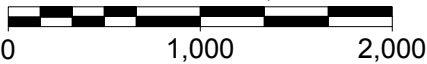
Figure B1  
WRI Job # 18059  
Rated by: EC

18059 CHIMPANZEE SANCTUARY NW - HWY 10  
 WETLAND RATING FIGURE 2 - WETLAND B



**LEGEND**

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

  
**Scale 1" = 1,000'**  



**Wetland Resources, Inc.**  
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance  
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208  
 Phone: (425) 337-3174  
 Fax: (425) 337-3045  
 Email: mailbox@wetlandresources.com

**WETLAND RATING**

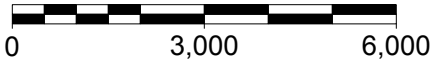
**Wetland B**

Chimpanzee Sanctuary NW	Figure B2
Attn: J. B. Mulcahy	WRI Job # 18059
PO Box 952	Rated by: EC
Cle Elum, WA 98922	




CHIMPANZEE SANCTUARY - HWY 10  
 WETLAND RATING FIGURE 3 - WETLAND B



Scale 1" = 3,000'



**LEGEND**

-  WETLAND
-  AQUATIC RESOURCES ON THE 303(d) LIST
-  WATERS WITH A TMDL

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**WETLAND RATING**  
**Wetland B**

Chimpanzee Sanctuary NW  
 Attn: J. B. Mulcahy  
 PO Box 952  
 Cle Elum, WA 98922

Figure B3  
 WRI Job # 18059  
 Rated by: EC

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Wetland name or number C

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland C Date of site visit: March 22, 2018  
 Rated by S. Brainard Trained by Ecology?  Yes  No Date of training June 2015

HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI World Imagery

**OVERALL WETLAND CATEGORY III** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	
Landscape Potential	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	<input checked="" type="checkbox"/> M L	
Value	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	H M <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> M L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>5</b>	<b>8</b>	<b>18</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
<b>Vernal Pools</b>	<b>II</b>	<b>III</b>
<b>Alkali</b>	<b>I</b>	
<b>Wetland of High Conservation Value</b>	<b>I</b>	
<b>Bog and Calcareous Fens</b>	<b>I</b>	
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>	
<b>Aspen Forest</b>	<b>I</b>	
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>	
<b>Floodplain forest</b>	<b>II</b>	
None of the above		

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## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	C1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	C1
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	C1
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	C1
Map of the contributing basin	D 5.3	C2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	C2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	C3
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	C3

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

Wetland name or number C

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**  **YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

**NO - go to 3**  **YES - The wetland class is **Slope****  
**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

**NO - go to 4**  **YES - The wetland class is **Riverine****  
**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**  **YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number C

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating	
Slope + Riverine	Riverine	<input type="radio"/>
Slope + Depressional	<input type="checkbox"/> Depressional	<input checked="" type="radio"/>
Slope + Lake Fringe	Lake Fringe	<input type="radio"/>
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional	<input type="radio"/>
Depressional + Lake Fringe	Depressional	<input type="radio"/>
Riverine + Lake Fringe	Riverine	<input type="radio"/>

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number C**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:

- Wetland has no surface water outlet points = 5
- Wetland has an intermittently flowing outlet points = 3
- Wetland has a highly constricted permanently flowing outlet points = 3
- Wetland has a permanently flowing, unconstricted, surface outlet points = 1

**3**D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils) YES = 3  NO = 0 **0**

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- Wetland has persistent, ungrazed, vegetation for  $> \frac{2}{3}$  of area points = 5
- Wetland has persistent, ungrazed, vegetation from  $\frac{1}{3}$  to  $\frac{2}{3}$  of area points = 3
- Wetland has persistent, ungrazed vegetation from  $\frac{1}{10}$  to  $< \frac{1}{3}$  of area points = 1
- Wetland has persistent, ungrazed vegetation  $< \frac{1}{10}$  of area points = 0

**5**

D 1.4. Characteristics of seasonal ponding or inundation:

*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

- Area seasonally ponded is  $> \frac{1}{2}$  total area of wetland points = 3
- Area seasonally ponded is  $\frac{1}{4}$  -  $\frac{1}{2}$  total area of wetland points = 1
- Area seasonally ponded is  $< \frac{1}{4}$  total area of wetland points = 0

**0**

Total for D 1

Add the points in the boxes above

**8****Rating of Site Potential** If score is:  12- 16 = H  6- 11 = M  0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland receive stormwater discharges?

 Yes = 1  No = 0 **0**D 2.2. Is  $> 10\%$  of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1  No = 0 **0**

D 2.3. Are there septic systems within 250 ft of the wetland?

 Yes = 1  No = 0 **1**

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions

D 2.1- D 2.3? Source \_\_\_\_\_

 Yes = 1  No = 0 **0**

Total for D 2

Add the points in the boxes above

**1****Rating of Landscape Potential** If score is:  3 or 4 = H  1 or 2 = M  0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?

 Yes = 1  No = 0 **0**

D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?

 Yes = 1  No = 0 **0**

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?

 Yes = 2  No = 0 **0**

Total for D 3

Add the points in the boxes above

**0****Rating of Value** If score is:  2-4 = H  1 = M  0 = L

Record the rating on the first page

**Comments:** Areas surrounding the wetland are rated based on their current level of land use as directed by the rating system, which may not appear consistent with aerial imagery of the investigation area.


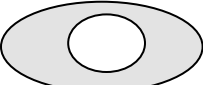
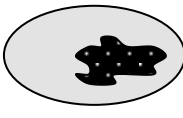
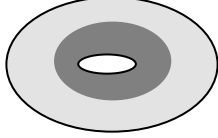
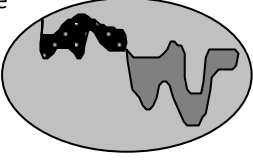
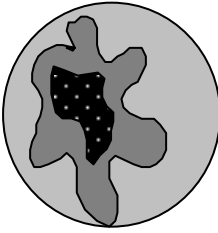
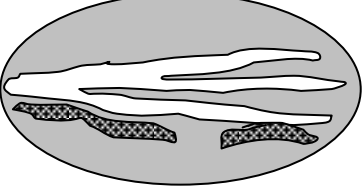
Wetland name or number C

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> <input type="checkbox"/> Wetland has no surface water outlet <span style="float: right;">points = 8</span> <input checked="" type="checkbox"/> Wetland has an intermittently flowing outlet <span style="float: right;">points = 4</span> <input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet <span style="float: right;">points = 4</span> <input type="checkbox"/> Wetland has a permanently flowing unconfined surface outlet <span style="float: right;">points = 0</span> <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>		<b>4</b>
D 4.2. <u>Depth of storage during wet periods:</u> <i>Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</i> <input type="checkbox"/> Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 8</span> <input type="checkbox"/> Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 6</span> <input type="checkbox"/> The wetland is a headwater wetland <span style="float: right;">points = 4</span> <input type="checkbox"/> Seasonal ponding: 1 ft - < 2 ft <span style="float: right;">points = 4</span> <input checked="" type="checkbox"/> Seasonal ponding: 6 in - < 1 ft <span style="float: right;">points = 2</span> <input type="checkbox"/> Seasonal ponding: < 6 in or wetland has only saturated soils <span style="float: right;">points = 0</span>		<b>2</b>
Total for D 4		Add the points in the boxes above <b>6</b>
<b>Rating of Site Potential</b> If score is: <input type="checkbox"/> 12-16 = H <input checked="" type="checkbox"/> 6-11 = M <input type="checkbox"/> 0-5 = L <span style="float: right;"><i>Record the rating on the first page</i></span>		

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	<input checked="" type="checkbox"/> <b>0</b>
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	<input checked="" type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	<input type="checkbox"/> <b>1</b>
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	<input checked="" type="checkbox"/> <b>0</b>
Total for D 5		Add the points in the boxes above <b>1</b>
<b>Rating of Landscape Potential</b> If score is: <input type="checkbox"/> 3 = H <input checked="" type="checkbox"/> 1 or 2 = M <input type="checkbox"/> 0 = L <span style="float: right;"><i>Record the rating on the first page</i></span>		

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND <input type="checkbox"/> Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> <input checked="" type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> <u>Wetland outlets its hydrology only to the constrained localized area.</u> <span style="float: right;">points = 0</span> <input type="checkbox"/> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>		<b>0</b>
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	<input type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	<input checked="" type="checkbox"/> <b>0</b>
Total for D 6		Add the points in the boxes above <b>0</b>
<b>Rating of Value</b> If score is: <input type="checkbox"/> 2-4 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L <span style="float: right;"><i>Record the rating on the first page</i></span>		

Wetland name or number C

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input checked="" type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)      4 or more checks: points = 3</p> <p><input checked="" type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)      3 checks: points = 2</p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>		<b>2</b>
H 1.2. Is one of the vegetation types Aquatic Bed?		<input checked="" type="checkbox"/> Yes = 1    No = 0 <input type="checkbox"/>
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p style="text-align: right;"><input checked="" type="checkbox"/> Yes = 3 points &amp; go to H 1.4    No = go to H 1.3.2 <input type="checkbox"/></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p> <p style="text-align: right;"><input type="checkbox"/> Yes = 3    No = 0 <input checked="" type="checkbox"/></p>		<b>3</b>
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species _____</p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2 <input type="checkbox"/></p> <p style="text-align: right;">4-9 species: points = 1 <input checked="" type="checkbox"/></p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0 <input type="checkbox"/></p>		<b>1</b>
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p><input type="checkbox"/> <b>None</b> = 0 points</p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> <b>Low</b> = 1 point</p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> <b>Moderate</b> = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <input checked="" type="checkbox"/> <b>High</b> = 3 points         </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>		Figure__  <b>3</b>

Wetland name or number C

<b>H 1.6. Special habitat features</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>		
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.		
<input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.		
<input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		
<input checked="" type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
<input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity		
<input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )		
<b>Total for H 1</b>		<b>12</b>

**Rating of Site Potential** If score is:  15-18 = H  7-14 = M  0-6 = L Record the rating on the first page

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> <i>Calculate: % undisturbed habitat</i> <u>15</u> <i>+ [(% moderate and low intensity land uses)/2]</i> <u>10</u> <i>=</i> <u>25</u> <i>%</i>		
<input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon	points = 3	
<input type="checkbox"/> 20-33% of 1km Polygon	points = 2	
<input checked="" type="checkbox"/> 10-19% of 1km Polygon	points = 1	
<input type="checkbox"/> <10% of 1km Polygon	points = 0	
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> <i>Calculate: % undisturbed habitat</i> <u>39</u> <i>+ [(% moderate and low intensity land uses)/2]</i> <u>16</u> <i>=</i> <u>55</u> <i>%</i>		
<input checked="" type="checkbox"/> Undisturbed habitat > 50% of Polygon	points = 3	
<input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches	points = 2	
<input type="checkbox"/> Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
<input type="checkbox"/> Undisturbed habitat < 10% of Polygon	points = 0	
<b>H 2.3. Land use intensity in 1 km Polygon:</b>		
<input type="checkbox"/> > 50% of Polygon is high intensity land use	points = (- 2)	
<input checked="" type="checkbox"/> Does not meet criterion above	points = 0	
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b>		
	<input type="checkbox"/> Yes = 3 <input type="checkbox"/> No = 0 <input checked="" type="checkbox"/>	<b>0</b>
<b>Total for H 2</b>		<b>4</b>

**Rating of Landscape Potential** If score is:  4-9 = H  1-3 = M  < 1 = L Record the rating on the first page

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b>		
Site meets ANY of the following criteria:		points = 2
<input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)		
<input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)		
<input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species		
<input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources		
<input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan		
<input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B)	points = 1	
<input type="checkbox"/> Site does not meet any of the criteria above	points = 0	
<b>Rating of Value</b> If score is: <input checked="" type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L Record the rating on the first page		



Wetland name or number   C  

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<b>Cat. II</b> <b>Cat. III</b>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<b>Cat. I</b>

Wetland name or number   C  

<p><b>SC 4.0 Bogs and Calcareous Fens</b> Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;"><b>Cat. I</b></p> <p style="text-align: center;"><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b> Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)? Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)? Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;"><b>Cat. I</b></p> <p style="text-align: center;"><b>Cat. I</b></p> <p style="text-align: center;"><b>Cat. II</b></p> <p style="text-align: center;"><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b> <i>Choose the highest rating if wetland falls into several categories</i> If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

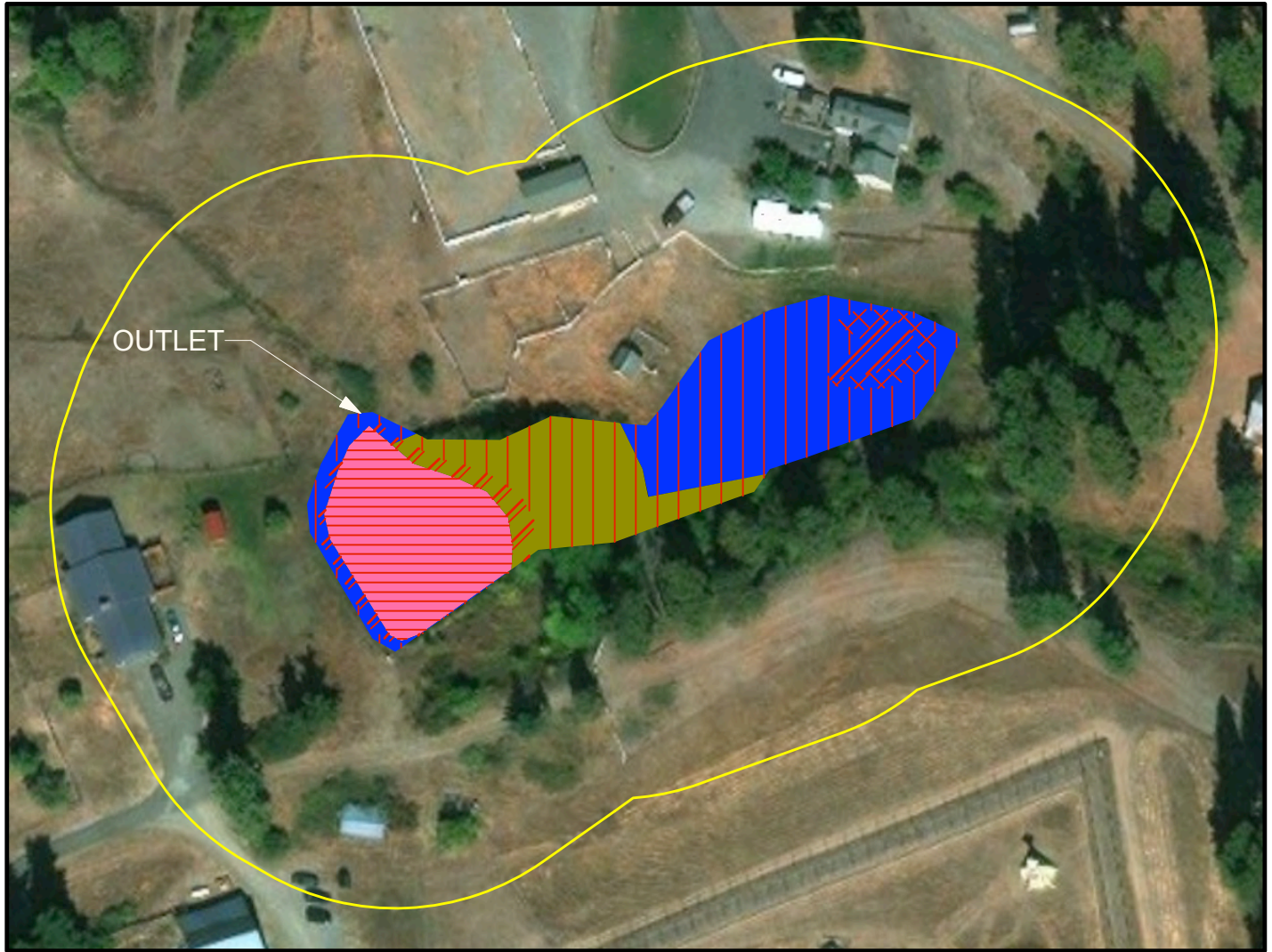
Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah:** All juniper woodlands.

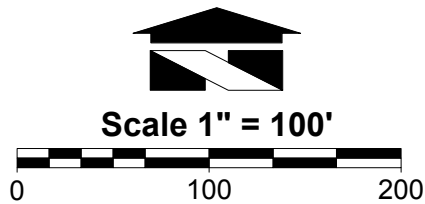
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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CHIMPANZEE SANCTUARY - HWY 10  
 WETLAND RATING FIGURE 1 - WETLAND C



LEGEND	
	SCRUB-SHRUB
	AQUATIC BED
	EMERGENT VEGETATION
	FORESTED VEGETATION
	SATURATED ONLY
	SEASONALLY FLOODED
	PERMANENTLY FLOODED
	150' FROM WL BOUNDARY



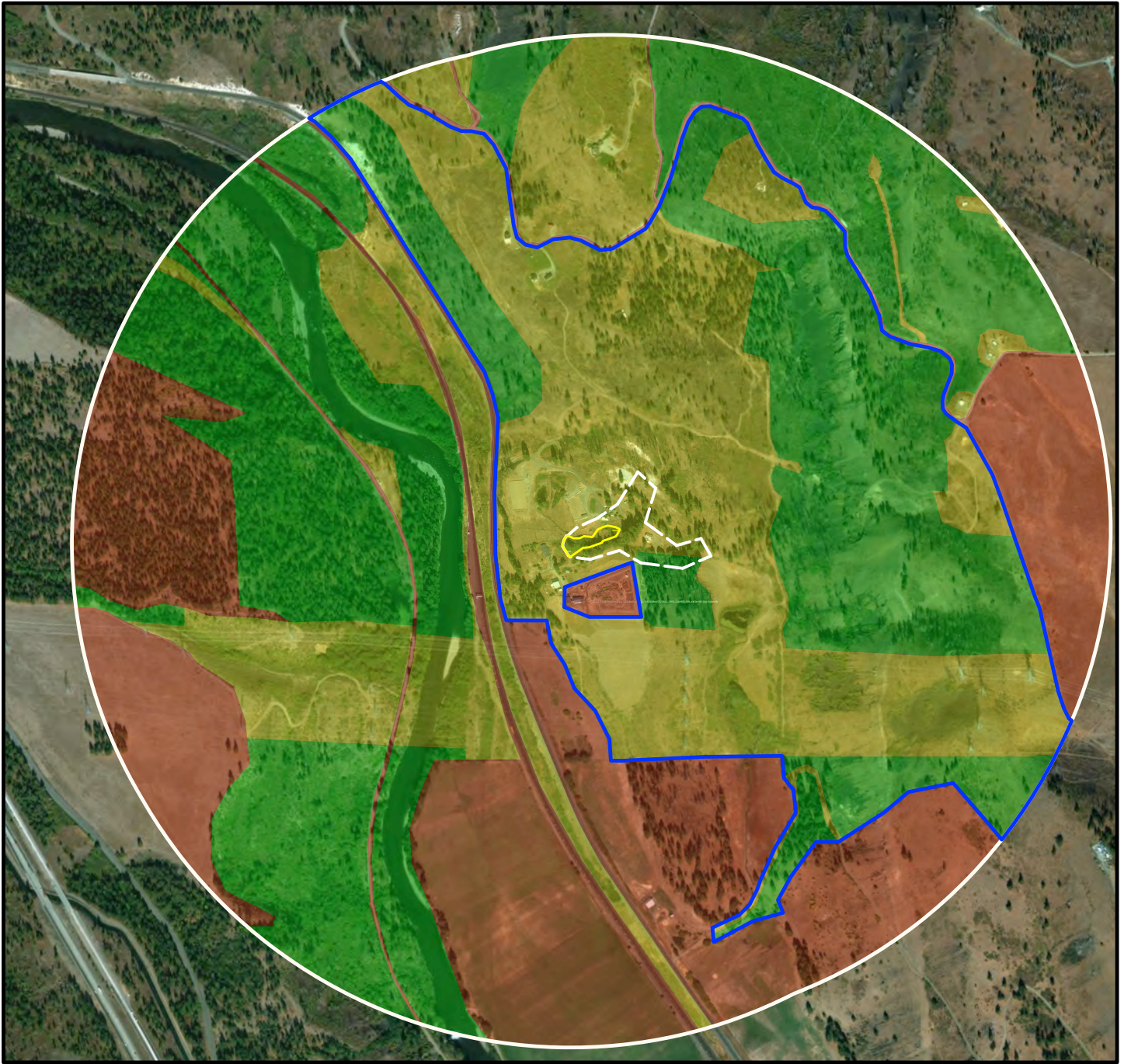
**Wetland Resources, Inc.**  
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance  
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208  
 Phone: (425) 337-3174  
 Fax: (425) 337-3045  
 Email: mailbox@wetlandresources.com

**WETLAND RATING**  
**Wetland C**

Chimpanzee Sanctuary NW  
 Attn: J. B. Mulcahy  
 PO Box 952  
 Cle Elum, WA 98922

Figure C1  
 WRI Job # 18059  
 Rated by: EC

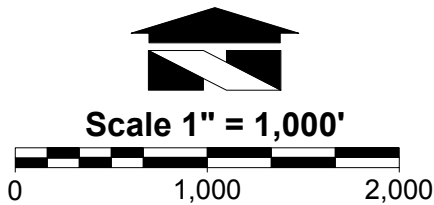
CHIMPANZEE SANCTUARY - HWY 10  
 WETLAND RATING FIGURE 2 - WETLAND C



**CONTRIBUTING BASIN  
 AREA RELATIVE TO  
 WETLAND UNIT IS 8:1**

**LEGEND**

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN



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 Email: mailbox@wetlandresources.com

**WETLAND RATING  
 Wetland C**

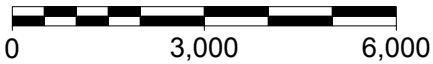
Chimpanzee Sanctuary NW  
 Attn: J. B. Mulcahy  
 PO Box 952  
 Cle Elum, WA 98922

Figure C2  
 WRI Job # 18059  
 Rated by: EC






CHIMPANZEE SANCTUARY - HWY 10  
 WETLAND RATING FIGURE 3 - WETLAND C



Scale 1" = 3,000'



**LEGEND**

-  WETLAND
-  AQUATIC RESOURCES ON THE 303(d) LIST
- 
-  WATERS WITH A TMDL
- 

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**WETLAND RATING**  
**Wetland C**

Chimpanzee Sanctuary NW  
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 PO Box 952  
 Cle Elum, WA 98922

Figure C3  
 WRI Job # 18059  
 Rated by: EC

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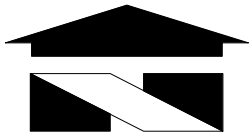
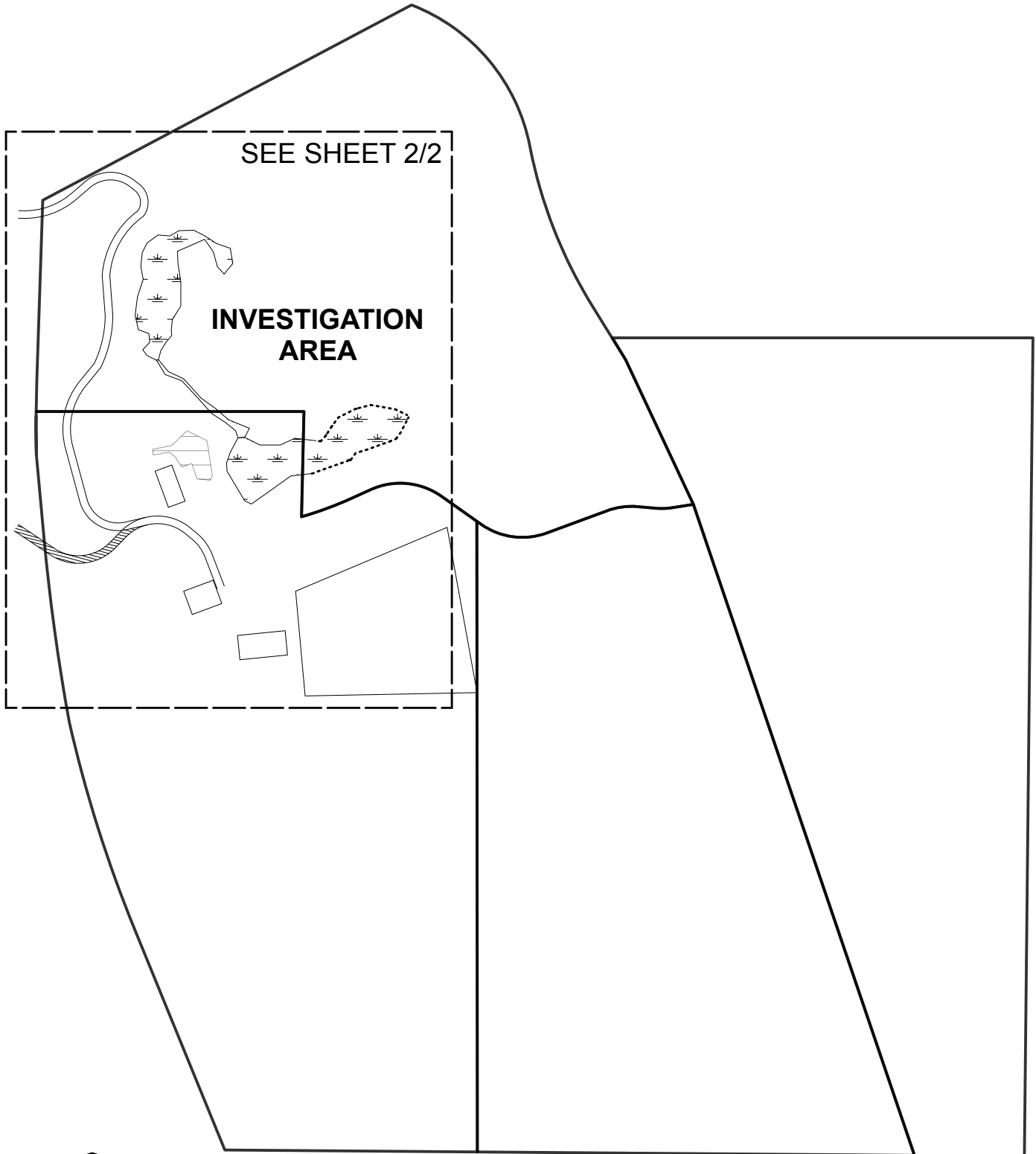
# **APPENDIX C**

CRITICAL AREAS STUDY  
AND BUFFER RESTORATION PLAN MAP  
(2 SHEETS)

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**CRITICAL AREAS STUDY MAP**  
**CHIMPANZEE SANCTUARY NW - DRIVEWAY REPLACEMENT**

PORTION OF SECTION 11, TOWNSHIP 19N, RANGE 16E, W.M.



Scale 1" = 300'



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CRITICAL AREAS STUDY MAP  
**Chimpanzee Sanctuary NW**  
**Driveway Replacement**  
Kittitas County, WA

Chimpanzee Sanctuary NW  
Attn: J B Mulcahy  
PO Box 952  
Cle Elum, WA 98922

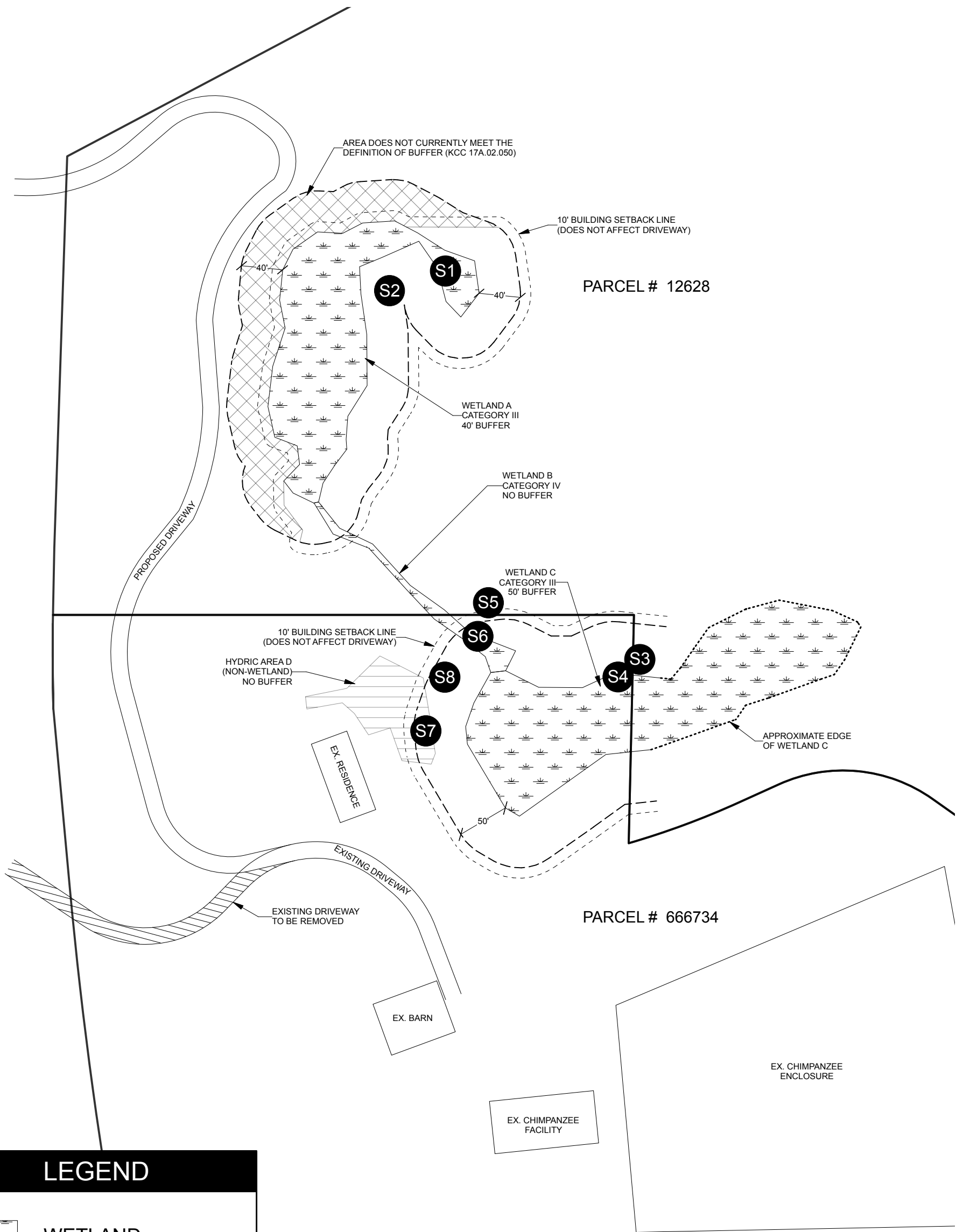
Sheet 1/2  
WRI Job#: 18059  
Drawn by: S. Walters  
Date: May 9, 2018

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# CRITICAL AREAS STUDY MAP

## CHIMPANZEE SANCTUARY NW - DRIVEWAY REPLACEMENT

PORTION OF SECTION 11, TOWNSHIP 19N, RANGE 16E, W.M.



### LEGEND

- WETLAND
- BUFFER
- DOES NOT MEET BUFFER DEFINITION
- BSBL
- HYDRIC AREA (NON-WETLAND)
- S1 – S8 DATA SITES
- PARCEL LINE

**Scale 1" = 100'**

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 Fax: (425) 337-3045  
 Email: mailbox@wetlandresources.com

CRITICAL AREAS STUDY MAP  
**Chimpanzee Sanctuary NW**  
**Driveway Replacement**  
 Kittitas County, WA

Chimpanzee Sanctuary NW Sheet 2/2  
 Attn: J B Mulcahy WRI Job#: 18059  
 PO Box 952 Drawn by: S. Walters  
 Cle Elum, WA 98922 Date: May 9, 2018

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