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August 31, 2020

Robert Wallace
330 112th Avenue NE
#200
Bellevue, Washington 98004

RE: Critical Area Reconnaissance Report – Wallace Ranch
Kittitas County, Washington
SWC Job #20-135

Dear Robert,

This report describes our observations of any jurisdictional wetlands, streams and/or buffers as well as unique habitat features and significant wildlife corridors on the Wallace Ranch Preliminary Conservation Plat.

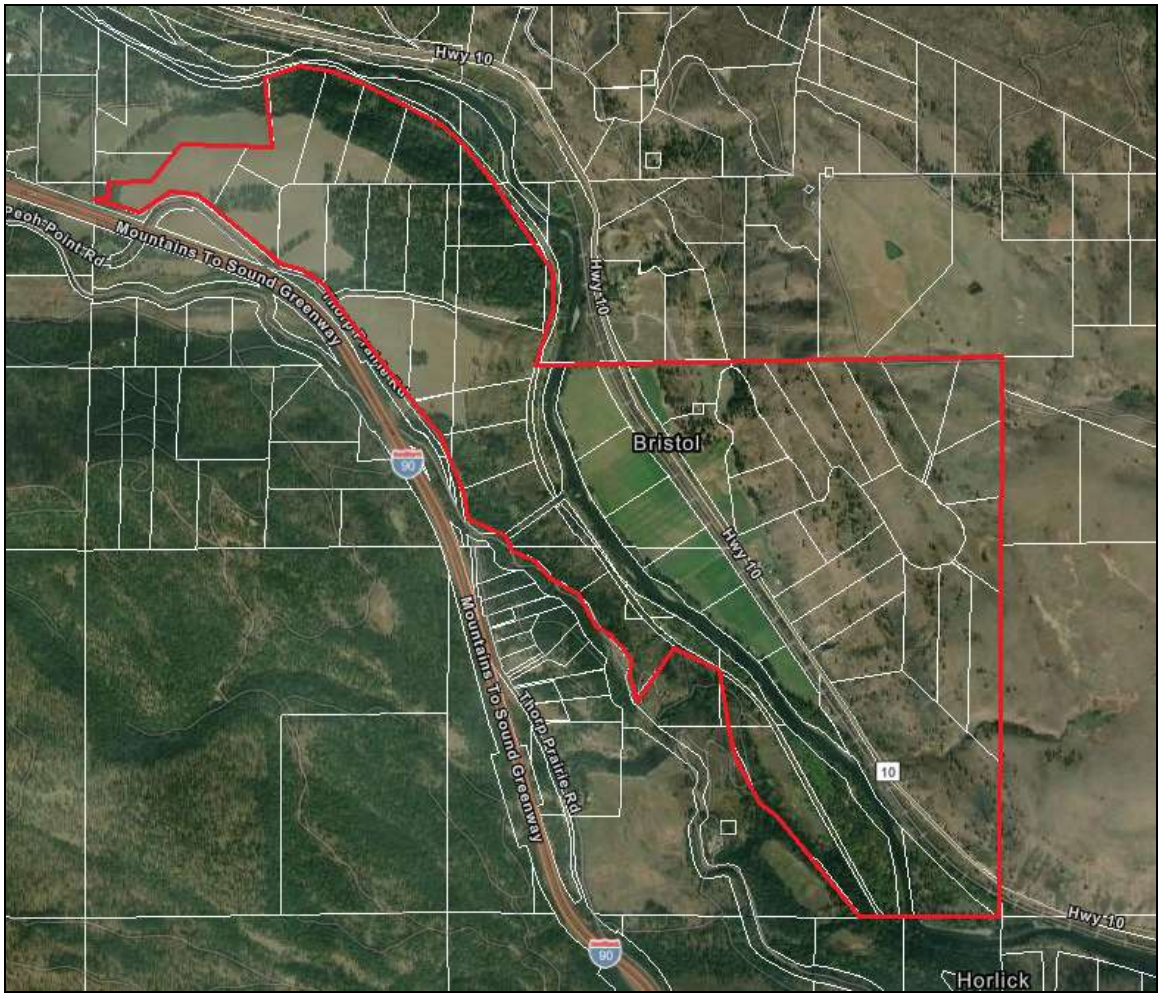
The site is approximately 1,600 acres in size and include areas to the west of SR10 between Thorpe Prairie Road and the Yakima River, as well as areas east of the Yakima River and east of SR10. The site is located within Sections 3, 10, 11, 12, 13 & 14, Township 19 North, Range 16 East of the W.M.

The proposed site plan includes large areas of open space particularly east of SR10, as well as two areas of single family development.

The emphasis of this study was to review the proposed areas of single family lots and associated infrastructure proposed on the site (see *Wallace Ranch LLC Overall Site Development Plan* - Encompass Engineering, dated 5/2020, attached). These proposed development areas include;

1. Agricultural fields between Highway 10 and the Yakima River
2. Agricultural fields and some forested areas between Thorp Prairie Road and the eastern edge of the bluff overlooking the Yakima River to the east.

Above: Preliminary map of proposed development on the site.



Above: Vicinity Map of study area.

METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site in July and August of 2020. In the areas of proposed development where wetlands were encountered, they were flagged. The site was reviewed using methodology described in the ***Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*** (USACOE September 2008) as required by the US Army Corps of Engineers starting in June of 2009. This is the methodology currently recognized by Kittitas County for wetland determinations and delineations. The site was also reviewed using methodology described in

Soil colors were identified using the 1990 Edited and Revised Edition of the ***Munsell Soil Color Charts*** (Kollmorgen Instruments Corp. 1990.

Other features including streams and other habitat features or "priority habitats" were mapped off an aerial photograph.

The site was walked in its entirety to identify any unique habitats as well as observe wildlife utilizing the site and or sign of wildlife. In additions reviews of existing data and mapping of various inventories was conducted of the site.

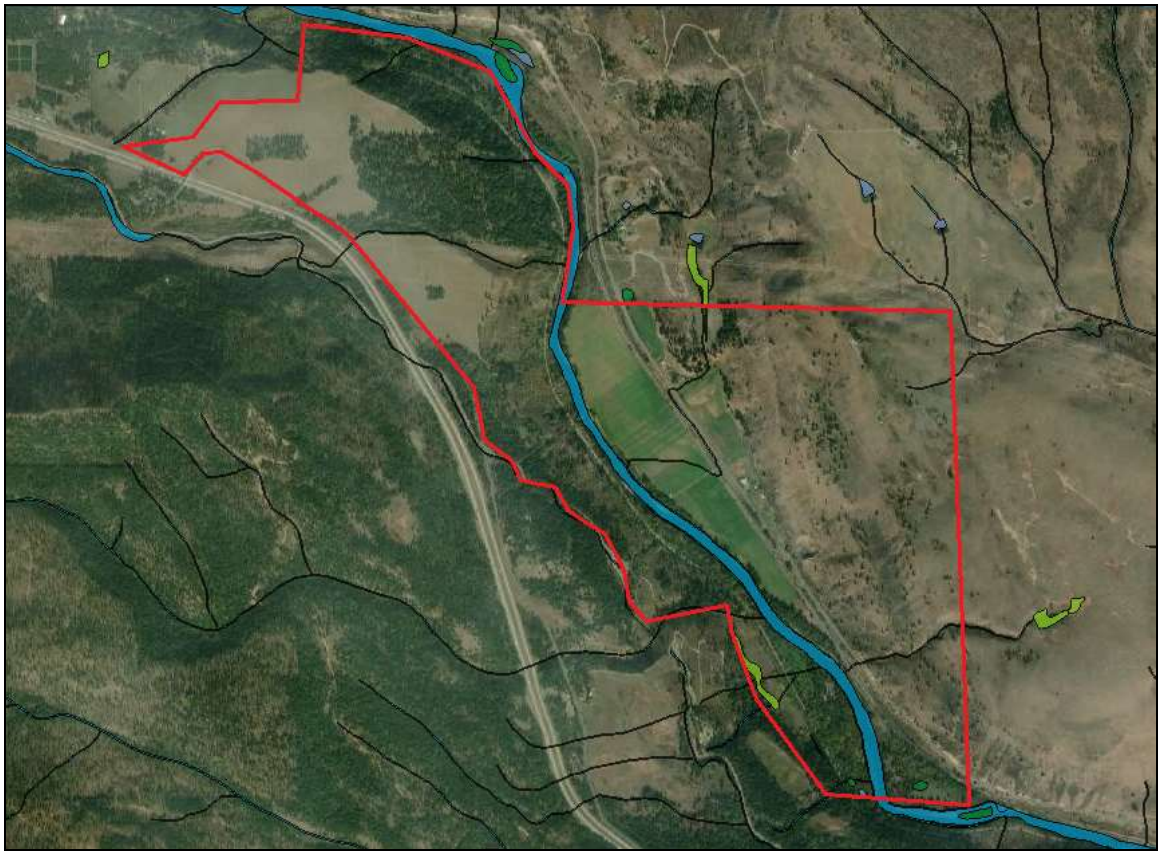
OBSERVATIONS

Existing Site Documentation.

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the National Wetland Inventory Map and the NRCS Soil Survey online mapping and Data.

National Wetlands Inventory (NWI)

The NWI map depicts no wetlands in the areas of proposed development. A stream is depicted flowing easterly towards the Yakima River on the south side of the northwest development area. The Yakima River is depicted along the northern area of development in the existing agricultural fields of the Bristol Flats area. There is also a stream mapped through the agricultural fields which was found not to exist during our site inspection.



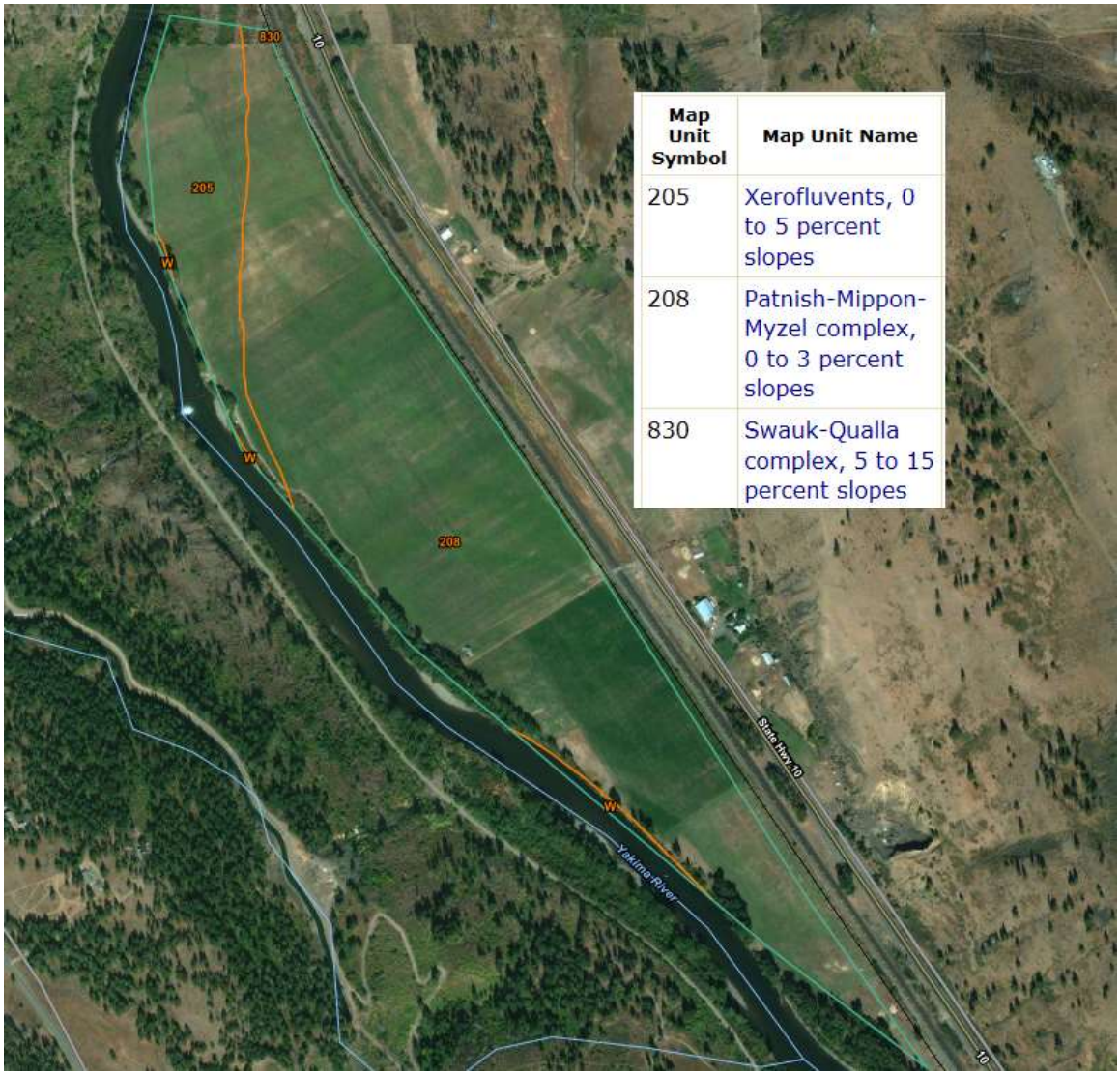
Above: NWI map of the area of the site

(The wetlands and deepwater habitats in this area were photo interpreted using **1:58,000** scale, **color infrared** imagery from **1983**.)

Soil Survey

According to the NRCS Soil Mapper website, the proposed areas of development on the site are mapped as containing 5 soil types; Xerofluvents 0%-5% slopes, Patnish-Mippon-Myzel complex 0%-3% slopes, Swauk-Qualla complex 5%-5% slopes, Loneridge ashey loam 25%-45% slopes, and Teanaway ashy loam 0%-10% slopes. All of these soils are moderately well drained to excessively well-drained.

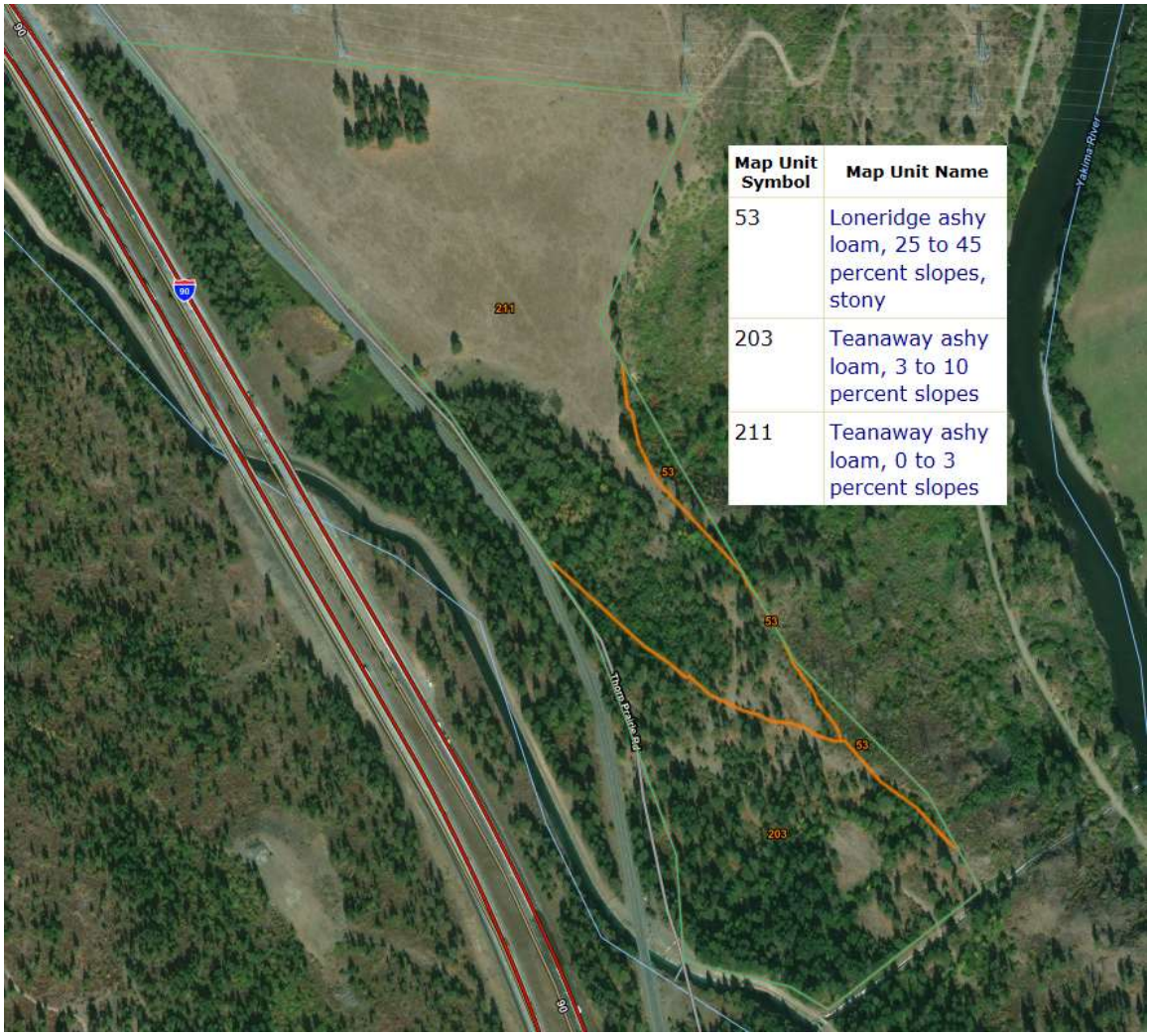
None of these soil series are considered "hydric" soils according to the publication *Hydric Soils of the United States* (USDA NTCHS Pub No.1491, 1991).



Map Unit Symbol	Map Unit Name
205	Xerofluvents, 0 to 5 percent slopes
208	Patnish-Mippon-Myzel complex, 0 to 3 percent slopes
830	Swauk-Qualla complex, 5 to 15 percent slopes

Above: NRCS soil map of the agricultural field on the north side of the site (Area #3) along Bristol flats.

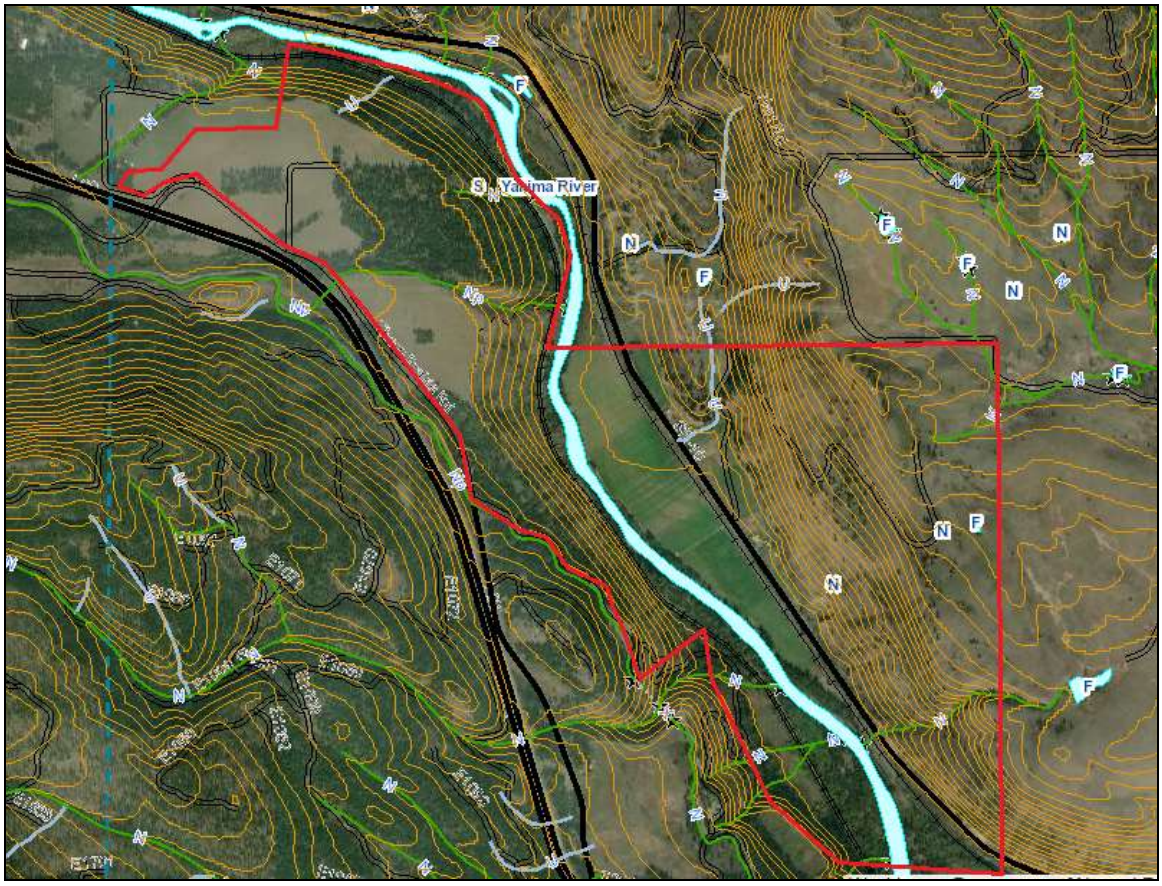
Above: NRCS soil map of the agricultural field and open forested area (Area # 1) long the southwest portion of the site abutting Thorp Prairie Road.



Above: NRCS soil map of the agricultural field and open forested area long the southeast portion of the site (Area #2) abutting Thorp Prairie Road.

WADNR Fpars Stream Mapping

The Washington Department of Natural Resources Fpars stream type mapping website depicts the Yakima River through the center of the site as a Type S or Shoreline of the site. Several other Type N streams are depicted on the site. Type N streams are non-fish bearing streams which are roughly the equivalent of the older Type 4 & 5 classification method. There is also an unclassified stream on the eastern side of the site of Highway 10 and outside the proposed development area.



Above: WDNR Fpars stream mapping for the area of the site.

WDFW Priority Habitats

According to the WDFW Priority Habitats mapping website, the areas of proposed development on the site are located within the Township where the Northern Spotted Owl, as well as the Gray Wolf have been observed or are thought to be present. Both of these species are Federally endangered species.

The eastern side of site and east of Highway 10 are mapped as containing winter range and concentrations for mule deer which includes the Swauk Prairie deer inter range, Highway 10 winter range and concentrations. The easternmost portion of the site is also identified as containing regular concentrations of elk as well as some area of high quality shrub steppe.

ABOVE: WDFW Priority Habitats mapping of the area of proposed development on the site. The light tan shading in these areas indicated potential Gray wolf and Northern Spotted Owl habitat at the Township accuracy level.

April 8, 2020 WDFW Comment letter

Washington Department of Fish and Wildlife commented on the preliminary project submittal on April 8, 2020 with several recommendations (See attached letter). The general recommendations to include the following;

•Apply conservation measures to all open space tracts to ensure all future uses are consistent with protection of critical areas.

•Incorporate additional open space corridor between Thorp Prairie Road and the Yakima River towards the northwestern edge of the proposed development area to provide a safer migration corridor for wildlife.

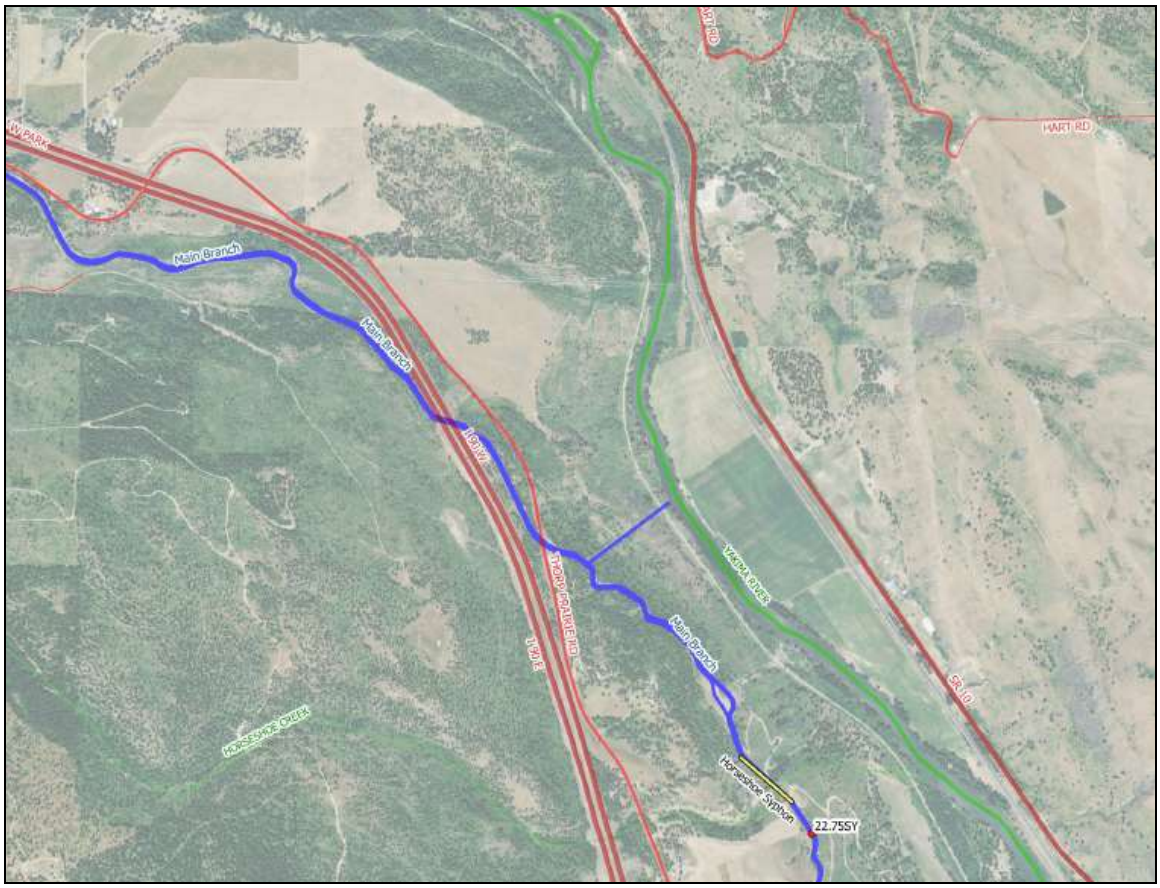
•Reconfigure lots along the east bank of the Yakima River to incorporate open space designation between the lots and the river instead of the previously submitted corridor between the lots and the railroad tracks.

•Complete a critical area study of the site so any impacts to critical areas can be appropriately mitigated for.

In addition, during at telephone conversation with Jennifer Nelson of WDFW, she noted WDFW data indicated the potential of western gray squirrel habitat/Oregon White oak on or near the site as some had been identified further east near the mouth of the Teanaway River.

KRD Irrigation District System Mapping

The KRD irrigation District mapping depicts the main KRD Canal ("Main Branch") along the south side of the site near Thorp Prairie Road, as well as the flume which is an overflow feature from the canal to divert water back to the Yakima River. No other irrigation features are noted.



Above: A portion of KRD Map #4 depicting irrigation deliveries (in blue) to the site.

Field observations

The site was divided into 4 main areas for review purposes. A more intense review of the 3 proposed development areas was applied as that is the area of potential impacts. The remainder of the site will be preserved in open space tracts and was reviewed on a more general reconnaissance level.

Above: Study areas in a preliminary layout of the proposed area of development

The four main areas study include;

1. Area #1 The northwest proposed lot area within an existing agricultural field along Thorp Prairie Road.

2. Area #2 The southwest proposed Lot area also within existing agricultural fields and a mixed forested area extending south towards the KRD flume and east of the Main Branch.

3. Area #3 The proposed lots within the existing agricultural field along SR 10 and bordering the Yakima River as well as the existing Wallace Ranch site on the eastern side of Highway 10.

4. The remaining area of the 1,600 acre site including the area east of SR 10.

Area #1 – Proposed Lots at the northwest side of the site.

A) Wetland and streams

This area consists of proposed lots within an existing hay field bordering Thorp Prairie Road and extending east to the crest of the steep slope that drops off to the east towards the John Wayne/Palouse Trail and the Yakima River.

The main body of the area consists of a hay field used to grow quackgrass as well as graze cattle. This area extends into a forested area to the south and east which is relatively open appearing to have been thinned in the recent past. In addition, this area is actively grazed by cattle. An old, dilapidated home structure is located along the north end of the area within the trees near the edge of the pasture.

The forested area contains an overstory of ponderosa pine and douglas fir with scattered cherry, with understory species including serviceberry, hazelnut, oceanspray, Washington hawthorne, chokecherry, blue elderberry, snowberry, lupine, salsify and scattered rabbitbrush.

A stream passes along the south side of this proposed area of lots draining to the east and into a man-made pond area with a berm, and through a small farm road culvert before passing over the crest of the steep slope and down under the power lines to wetlands along the west side of the Palouse Trail, and eventually into the Yakima River. This stream is depicted as a Type Np on WDNR Fpars mapping and appears to have flow originating in both natural sources west of the site and I-90 as well as probable leakage and possibly diversion from the KRD Main Branch.

The stream is depicted as a Type Np on the Fpars mapping despite being quite large in size (8'-12' in width and 12"deep). The stream flows into a

impounded pond feature which may or may not have any fish use. No fish have been observed within the pond area nor in the channel area on any of our numerous site visits. The stream passes down a slope steeper than 16% to the Yakima River and would therefore be to steep to expect anadromous fish to utilize the channel. As a result the Type N classification of this channel appears correct. Under Kittitas County Code Chapter 17A .02.300, with the apparent lack of fish use, this would be considered a Type 4 water.

"Type 4 waters" are segments of natural waters within Kittitas County which are not classified as Type 1, 2 or 3 and have a channel width of two feet or more between the ordinary high water marks.*

Type 4 waters are listed as having a buffer of 10'-20' from the OHWM (KCMC 17A.07.010). Since this stream is surrounded by a Category III wetland, the buffer of the wetland would be larger than the stream buffer and would dictate the limits of development in this area.

17A.07.010 Riparian habitat.

1. Riparian Habitat Critical Areas shall constitute Type 1, 2 and 3, including portions of Type 4 and 5 waters at the intersecting points with a Type 1, 2, or 3 waters. Type 4 waters will be designated a critical area for a distance of forty to five hundred feet. Type 5 waters shall be designated a critical area where it is located within the buffers for Types 1, 2 or 3 waters, as determined by the planning manager.

2. Performance Standards Buffers.

Type 1 waters	40-200 feet from OHWM.
Type 2 waters	40-100 feet from OHWM.
Type 3 waters	20- 50 feet from OHWM.
Type 4 waters	10- 20 feet from the intersection with a Type 1, 2 or 3 water for a distance of 40 to 500 feet. From the point at which the buffer ends (40 - 500 feet upstream from the confluence), there shall be a 15-foot structural setback from the ordinary high water mark.

Type 5 waters	None required (buffering will be provided by the Type 1, 2 or 3 waters' buffers). Note: Building setbacks from a Type 5 water will be 15 feet, unless a buffer greater than or equal to the 15-foot setback is in place.

A narrow band of forested wetland borders (referred to as "Wetland C") the stream and is heavily trampled by livestock. The north edge of this wetland facing proposed lots was flagged with pink flagging labeled C1-C31 (gps points 150-180). This area is vegetated with a mix of black cottonwood, pacific willow, and a grazed understory of soft rush, sedge, speedwell and some scattered rose. Soils in this area were black cobbly loams with redoximorphic features within the B-horizon soil profile and soils saturated near the surface.

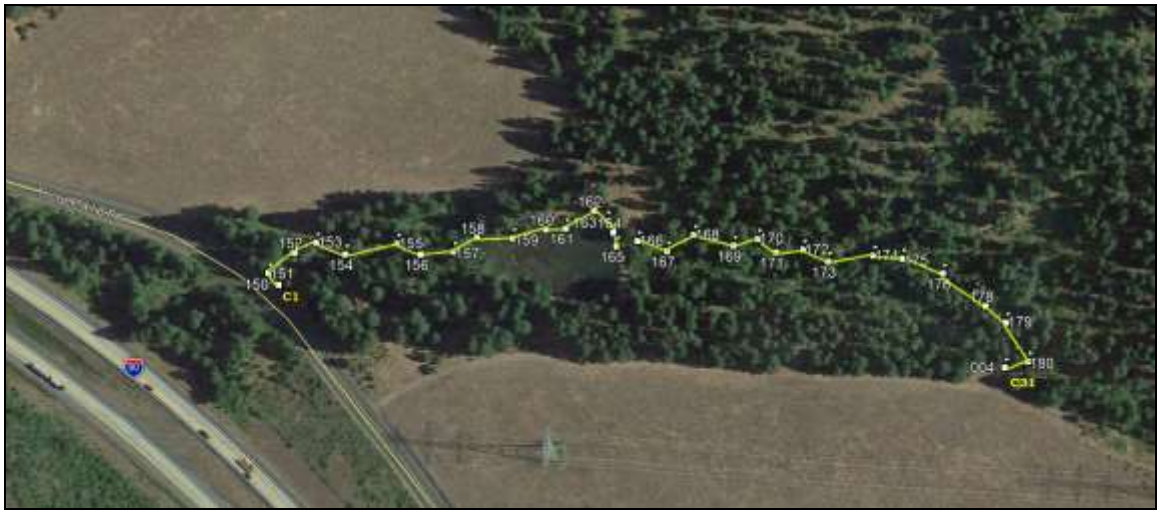
Wetland C was rated using the WADOE *Washington State Wetland Rating System for Eastern Washington 2014 update* (Publ No. 14-06-030). This wetland was rated as a riverine wetland and scored a total of 18 points with 8 points for habitat indicating a Category III wetland. According to Kittitas County Municipal Code Chapter 17.1, Category III wetlands have a buffer range of 20'-80'. Since this wetland has a high habitat score of 8 the higher range of the buffer (80') would typically be used.

The final lot layout in this area will be designed to avoid all critical areas and their buffers.

17A.04.020 Buffer width requirements.

Wetland buffer requirements apply to all nonexempt activities on regulated wetlands. All wetland buffers shall be measured from the wetland boundary.

Category	Size of Wetland	Required Buffer
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.



Above: Area #1 - GPS mapping of the location of the north edge of Category III Wetland C and Type 4 water.

B) Wildlife Use

This portion of the site has fairly heavy use by livestock which has impacted plant communities as well as some wildlife usage of the site. Cattle were within the forested areas of this area as well as around the stream and pond area during our site visits. However, the agricultural field and forested areas surrounding the stream is clearly used by deer and elk, as well as coyote, turkey and numerous other wildlife such as skunks, and various ground squirrels. No defined travel corridors were noted in this area other than around the stream and pond where some deer and numerous deer and elk tracks were noted. Some use in the pasture areas was also noted but nothing as concentrated as surrounding the stream and wetland.

In the western end of Wetland C and along the perimeter of the Type 4 water in this area, numerous long-toed salamanders (*Ambystoma macrodactylum*) were observed in both larvae and adult stages. Most were observed within small pools and depressions left by cattle wading through the creek. The long-toed salamander, has no special state or federal protection other than that given to all non-game wildlife.

No state or federally listed species were noted in this area of the site. This area does not contain typical habitat for the northern spotted owl

old growth forest) or the gray wolf, although these species could pass through the site.

Area #2 - The southwest proposed Lot area also within existing agricultural fields and a mixed forested area extending south towards the KRD flume and east of the Main Branch.

A) Wetland and streams

This area consists of proposed lots within the southern end of an existing hay field bordering Thorp Prairie Road as well as extending into a forested area that continues to the KRD overflow flume. The area is bordered by a steep slope with outcrops and some talus to the east on the slope down towards the Palouse Trail and Yakima River. Much of the forested area below the top of the slope was burned in forest fires in the last decade. The forested portion where development is proposed does not appear to have been burned.

The pasture area is similar to the pasture on the north, being planted with quackgrass and extending east to the crest of the steep slope that drops off to the east towards the John Wayne/Palouse Trail and the Yakima River. This area also contains some native and invasive species including lupine, cheat grass, tumble mustard, Russian thistle, salsify, scattered clumps of rose, blue grass and some Baltic rush. A clump of tree height ponderosa pine is located within this pasture with a heavily grazed understory of oceanspray, bluegrass, fescue, Oregon grape, snowberry.

Wetlands and streams that are located on the west side of Thorp Prairie Road in this area drain under the road into one main stream channel that passes along the southern edge of the pasture. This meandering channel passes over the lip of the canyon surrounding the Yakima River and makes its way to the Yakima over small waterfalls ad steep slope areas. This flow accumulates in linear wetland along the western side of the Palouse/John Wayne Trail to the east of the proposed development area.

The forested area south of the pasture contains a mix of forested and shrub habitats, with a mix of ponderosa pine and douglas fir forest as well as small areas of cottonwoods and quaking aspen in slope and

depressional type wetlands that form in and around channels of water that appear to be leakage from the KRD canal.

A fair amount of cattle grazing as well as wildlife use of this area leave a thick shrub strata with numerous game trails and paths used by cattle and wildlife such as some deer and elk. Understory species include hazelnut, oceanspray, serviceberry, Washington hawthorne, chokecherry, and rocky Mountain maple and Oregon grape.

A total of 4 streams were found in this area and all appear to originate in some degree from leaks or outflows from the KRD Canal. All of the channels are small (<2' width) with the exception of the northern channel along the pasture edge. The northern channel is as wide as 6' in width in some areas and contains a cobble gravel bottom. All of these streams go dry in the late fall and all are separated from the Yakima River by waterfalls and very steep slopes that preclude any fish use into these channels. As a result these streams would all be considered Type N waters. Under Kittitas County Code Chapter 17A .02.300, the stream in the northern end of Wetland A would be considered a Type 4 stream as its channel width exceeds 2'. All other channels within these wetlands appear to be Type 5 streams due to the narrow width below 2'and lack of fish use.

"Type 4 waters" are segments of natural waters within Kittitas County which are not classified as Type 1, 2 or 3 and have a channel width of two feet or more between the ordinary high water marks.*

"Type 5 waters" are segments of natural waters within Kittitas County which are not classified as Types 1, 2, 3 or 4 waters and have a channel width of two feet between the ordinary high water marks, including streams with or without well-defined channels.*

*Type 4 and 5 waters are not truly waters, but are waterways which are intermittent in nature and may be dry beds at any time of the year.

Type 4 waters are listed as having a buffer of 10'-20' from the OHWM (KCMC 17A.07.010). Since this stream is surrounded by a Category III wetland, the buffer of the wetland would be larger than the stream buffer and would dictate the limits of development in this area.

Type 5 waters have no setback except the BSBL of 15'. However, all of these streams are within wetland features (Wetlands A & B) which have buffers larger than any the stream would have.

Two wetland areas were identified and flagged in this area as Wetlands A & B.

Above: Preliminary GPS mapping of Wetland A on the north, and Wetland B on the south of Area #2.

Wetland A

Wetland A is a mix of slope, riverine and depressional type wetland bordering two small streams, one a Type 4 on the north and a Type 5 on

the south. This wetland was flagged with pink flags A1-A55 (gps points 036-089). The wetland contains a forested overstory of black cottonwood and some quaking aspen with pacific willow, red osier dogwood, twinberry, small fruited bulrush, soft rush, and sedge in the understory. Soils vary form a black gravelly loam to sapric muck organic soils and all were saturated near the surface during our site visit.

Wetland A was rated using the WADOE *Washington State Wetland Rating System for Eastern Washington 2014 update* (Publ No. 14-06-030). This wetland was rated as a depressional wetland and scored a total of 18 points with 8 points for habitat indicating a Category III wetland. According to Kittitas County Municipal Code Chapter 17.1, Category III wetlands have a buffer range of 20'-80'. Since this wetland has a high habitat score of 8 the higher range of the buffer (80') would typically be used.

Wetland B

Wetland B is similar to Wetland A in character and was flagged with pink flags labeled B1-B18 (gps points 090-127). This forested wetland borders small streams that appear to originate form leakage from the KRD canal. This wetland includes an overstory of red alder, sitka willow and pacific willow, rose, red-osier dogwood, as well as sedge, soft rush, small fruited bulrush, lady fern. And manna grass.

Soils were found to be a mix of dark gravelly loams with redoximorphic features in the B-horizon, as well as some as areas with sapric histic epipedon. Soils were found to be saturated within a foot of the surface during our site visit.

Wetland B was rated using the WADOE *Washington State Wetland Rating System for Eastern Washington 2014 update* (Publ No. 14-06-030). This wetland was rated as a depressional wetland and scored a total of 17 points with 9 points for habitat indicating a Category III wetland. According to Kittitas County Municipal Code Chapter 17.1, Category III wetlands have a buffer range of 20'-80'. Since this wetland has a high habitat score of 9 the higher range of the buffer (80') would typically be used.

The final lot layout in this area will be designed to avoid all critical areas and their buffers.

B) Wildlife Use

This portion of the site also has fairly heavy use by livestock which has impacted plant communities and to some degree use by wildlife. However, the area is used by deer and elk, as well as coyote, turkey and numerous other wildlife. Browsing was evident in this area as were areas where deer or elk bed down were noted.

Species also noted in this area along the old farm road that passes through the forest near the edge of the canyon were either fence or sagebrush lizards (moved to fast to positively identify).

No defined travel corridors were noted in this area other than around the stream and pond where some deer and numerous deer and elk tracks were noted. Some use in the pasture areas was also noted but as with the area to the north, nothing as concentrated as within and around the stream and wetland.

No state or federally listed species were noted in this area of the site. This area does not contain typical habitat for the northern spotted owl (old growth forest) or the gray wolf, although these species could pass through the site.

Area #3. The proposed lots within the existing agricultural field along SR 10 and bordering the Yakima River.

A) Wetlands and Streams

The third area of proposed development is along the west side of SR10 in the Bristol area and consists of a large agricultural hay field planted with a mix of tall fescue and orchard grass. This area is irrigated with water pumped from the Yakima River and is irrigated and cut several times in the growing season. An existing farm road passes from SR 10 to the Yakima River and a barn and a publicly used river boat access area. A gravel road runs along the edge of the forested band of vegetation and wetlands along the rivers edge. Several old farm access points to the river bed area located along the length of the property.

Although a stream is depicted in the NWI maps passing through the agricultural field from SR 10 near the central access road, it was found not to exist. There is a small stream seasonal that crosses under SR 10 and appears to sheet flow southeasterly between the railroad tracks and SR 10 through an area of reed canary grass and fescue. It is unknown if flow continues in this area in periods of heavy runoff or if the water just infiltrates. No defined channel is present here. Any water that would pass through this drainage passes through a culvert under the farm road and continues southeast between SR 10 and the railroad track to a linear forested area near the south end of the site where it then appears to pass under the railroad tracks and enters the Yakima River.

The Yakima River is a Type S water or a Shoreline of the state. Kittitas County has a 100' buffer measured from the OHWM of the River.

17B.05.050-1. Standard Shoreline Buffers (Type S Waters)

Shoreline Environment Designation	Type S Standard Shoreline Buffer Width (feet)
Urban Conservancy	100
Shoreline Residential	100
Rural Conservancy	100
Natural	150

Two areas of riparian wetland (designated "Wetland D") were noted between the Yakima River and the agricultural fields. These areas are separated by a small area of upland where the old irrigation and current irrigation intakes are located. The wetland was flagged with pink flags labeled D1-D22 (gps points 181-202).

The wetland is riverine and forested and appear to regularly flood. The wetland is vegetated with black cottonwood and pacific willow in the overstory with reed canary grass, rose, crabapple and red-osier dogwood in the understory. Soils varied from a mottled gravelly sandy loam to inundated sandy muck soils near the south end of the wetland.

Wetland D was rated using the WADOE *Washington State Wetland Rating System for Eastern Washington 2014 update* (Publ No. 14-06-030). This wetland was rated as a riverine wetland and scored a total of 21 points with 8 points for habitat indicating a Category II wetland. According to

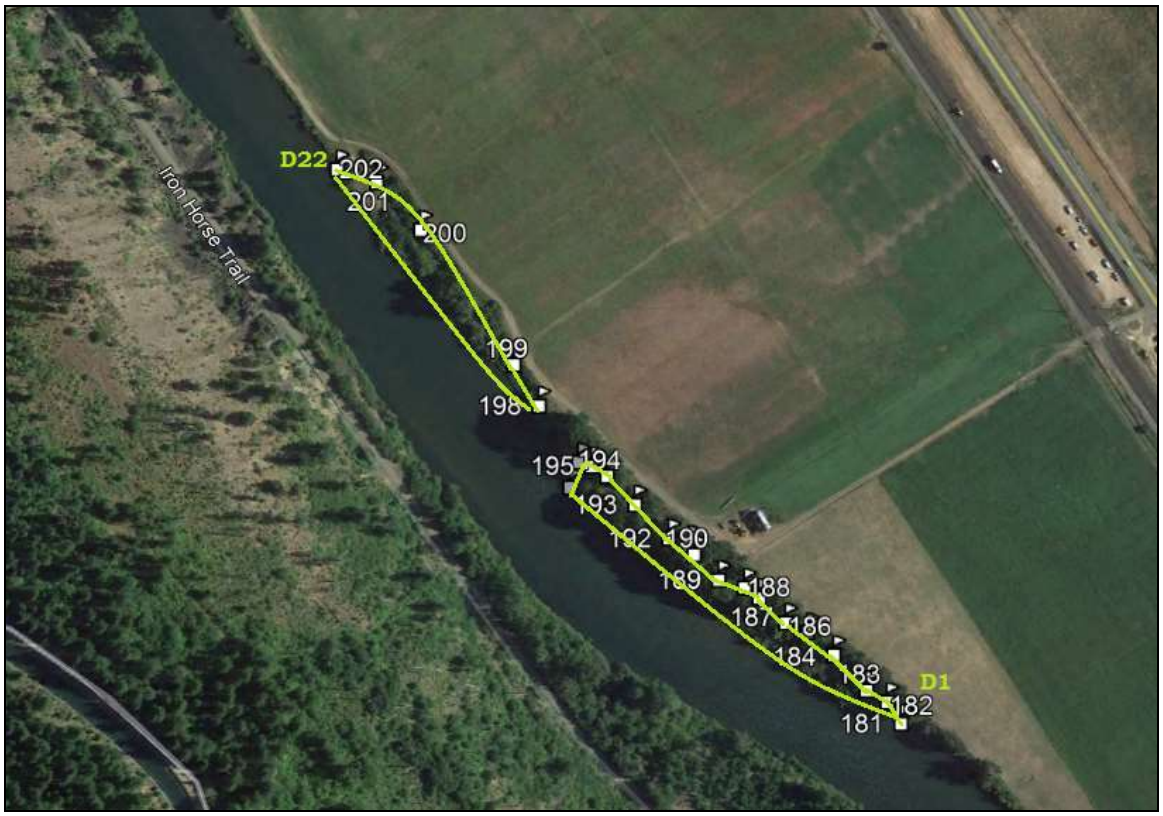
Kittitas County Municipal Code Chapter 17BH (Shorelines), Category II wetlands for a moderate land use as is proposed in the area of this wetland would have a have a 150' buffer. It should be noted that all of the buffer is mowed pasture with low function.

17B.05.020G Wetlands – buffers.

1. Buffer widths: Buffers shall be established and maintained to protect all regulated wetlands. Standard minimum buffer for wetlands are listed in the Table at KCC 17B.50.020G-1. The buffer shall not be altered except as authorized by this Program; provided, that such alterations meet all other standards for the protection of regulated wetlands. Buffers are measured horizontally in all directions from the regulated wetland edge as marked in the field.

17B.50.020G-1. Wetland Buffers for Wetlands in Shoreline Jurisdiction

Wetland Category	Low Intensity Use and Development	Low and Moderate Intensity Use and Development*	High Intensity Use and Development*
Category I	125 feet	190 feet	250 feet
Category II	100 feet	150 feet	200 feet
Category III	75 feet	110 feet	150 feet
Category IV	25 feet	40 feet**	50 feet



Above: Gps mapping of Category II wetland (Wetland D)

Above: Area #3 and location of Category II wetlands along the northeast bank of the Yakima River, A Type S water.

B) Wildlife Use

This portion of the site is impacted by the agricultural use of the area of the proposed lots as well as the bordering railroad tracks and Highway 10. However, the habitat along the river and within the Category II wetland is very good with substantial wildlife use. The buffer of these features is of low function as the forested wetland and vegetation along the river is bordered by a gravel road used regularly for public fishing access as well as the mowed hayfield agricultural use. In addition, there

are several areas of trash, debris and livestock carcass dumps areas that are along the banks further impacting these areas.

No defined travel corridors were noted in this area. Tracks of elk and deer was present along the river but primarily along the forested area along the river bank. Turkeys were observed in the areas along the railroad tracks.

The final lot layout in this area will be designed to avoid all critical areas and their buffers.

No state or federally listed species were noted in this area of the site. This area does not contain typical habitat for the northern spotted owl (old growth forest) or the gray wolf, although these species could pass through the site.

Area #4 Open Space

This area consists of the large open space areas between the Yakima River and the western side of the site as well as all of the area east of Highway 10.

West of Yakima River

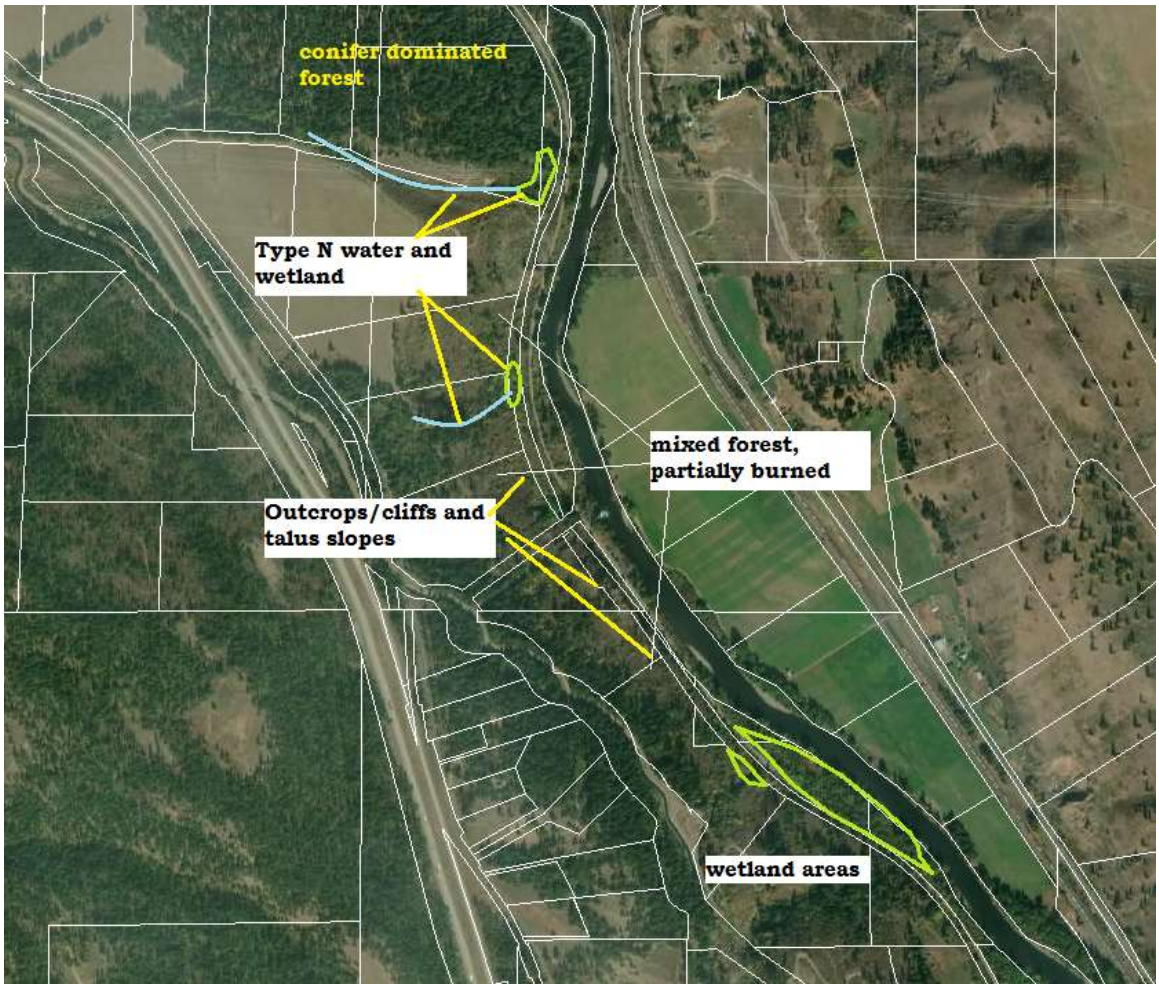
The area to the west of the Yakima River includes a mix of small forested, scrub-shrub and emergent wetlands along the western edge of the Palouse Trail. These wetlands are fed by the streams that cascade off the bluff in and around Wetlands A-C. Much of this area was burned during the 2012 Taylor Bridge Fire. Numerous snags and downed logs remain from the fire however forested growth has come back and densely vegetated much of the area. This area has a mix of small ponderosa pines, maples, hazelnut, oceanspray, blue elderberry, and small patches of quaking aspen. This area also contains several priority habitats including cliffs, talus slopes, and one approximately 2 acre quaking aspen stand within the central wetland.

East of Hwy 10

To the east of highway 10, the open space area consists of a steep hillside and upper plateau of small patches of open pine forest, grazed pasture areas and grazed shrub steppe. A small quarry is located along the

bottom of the hill and several old farm roads cross the hillside. Vegetation consists of scattered single and clumps of ponderosa pine, as well as serviceberry, hazelnut, snowberry, oceanspray, rose, rabbitbrush and small amounts of sagebrush on the eastern edge, lupine, cheatgrass, quackgrass, and Russian thistle.

One significant feature along the south end of this area is a Type N stream that cascades down through several waterfall areas within a narrow ravine bordered by basalt outcrops and small talus slopes. This stream was dry during our site visit.

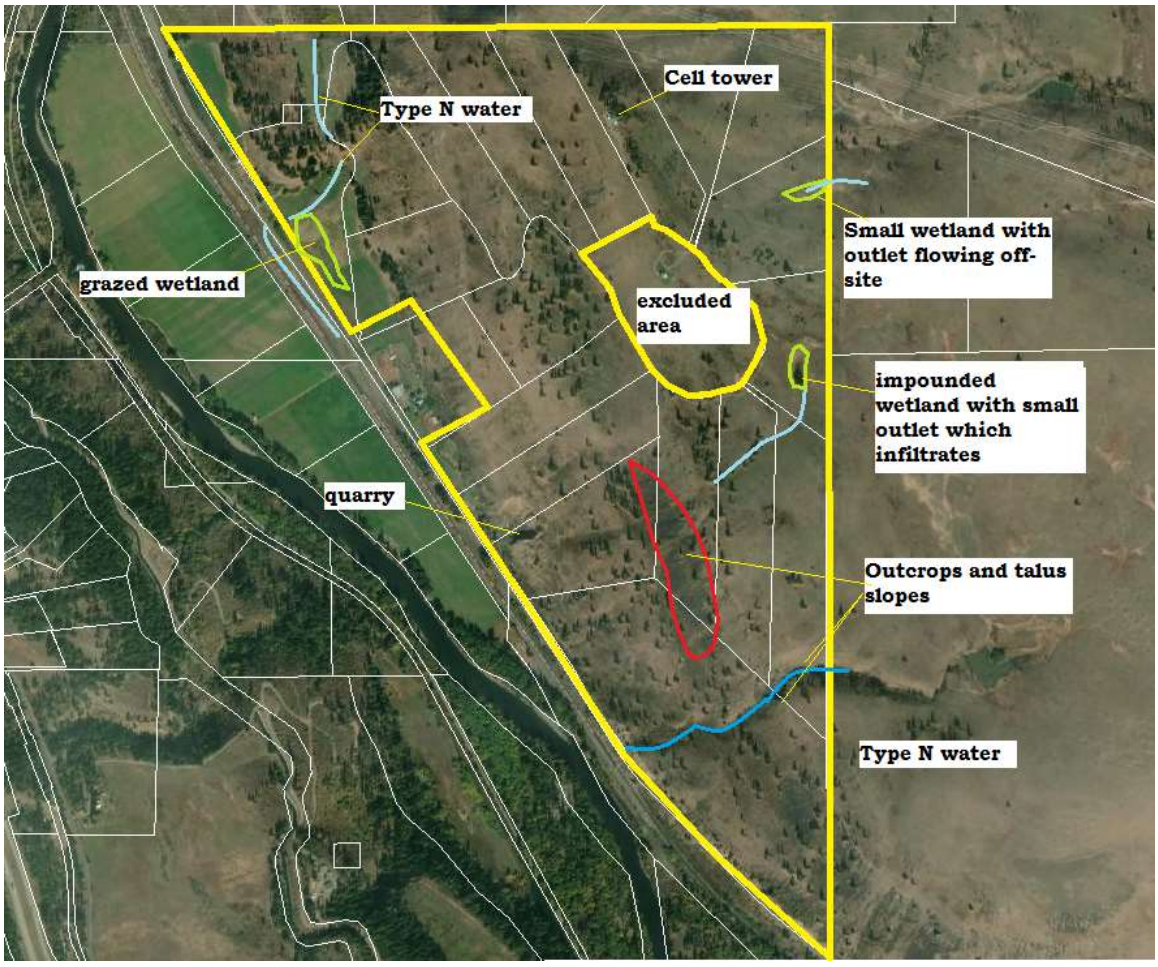


Above: Habitat features along the portion of open space between the western lots areas (Area #1 & #2) and the Yakima River.

It appears the stream originates in an impounded pond/wetland feature located off-site to the east.

Two other small wetland areas were noted on top of the plateau. One wetland is an impounded feature with seasonal ponding which discharges through a berm and culvert into a very small (12”-24”) wide meandering channel that appears to infiltrate as it flows to the west down the hillside.

The other wetland is near the northeast corner and is in a wet meadow that has a small channel within its boundaries draining towards the east and off-site.



Above: Habitat features along the portion of open space east of Highway 10.

A small stream was also noted near the north boundary closer to Highway 10 which drains into a grazed emergent wetland in the horse

pasture area along Highway 10 and then under the highway and into the grassed area between the railroad tracks and highway where it appears to infiltrate.

The west facing slopes has areas of outcrops and talus slopes. Numerous marmots were noted in and around the areas of talus. Several mule deer were observed in the small treed area west of the outcrops as well as a red-tailed hawk, kestrel, magpies and numerous songbirds. The northeast portion of the site contained many ground squirrel burrows although the area has a large amount of invasive cheatgrass.

In general the eastern area of the site is relatively undisturbed habitat used by a significant number of species due to the richness of habitats an edges throughout this area. Cattle grazing is the one impact that occurs in this area and degrades habitat to an extent.

No state or federally listed species were noted in this area of the site. This area does not contain typical habitat for the northern spotted owl (old growth forest) or the gray wolf, although these species could pass through the site.

Response to WDFW Comments Regarding Project related to Critical Areas

As previously mentioned, WDFW requested the information below in a April 8, 2020 letter to the County. Below is each request andn response based upon the project at this time;

•*Apply conservation measures to all open space tracts to ensure all future uses are consistent with protection of critical areas.*

Response: The critical areas described in this report in the vicinity of the proposed lots will be protected with their associated buffers.

•*Incorporate additional open space corridor between Thorp Prairie Road and the Yakima River towards the northwestern edge of the proposed development area to provide a safer migration corridor for wildlife.*

Response: The most heavily used wildlife corridor in this area is along the type N water and Wetland C. Protection of the wetland, stream and

associated buffers should allow an appropriate corridor for most wildlife in this area as they seem to use this area and the area long the power line to the south for most travel between the site and towards the Yakima River.

•Reconfigure lots along the east bank of the Yakima River to incorporate open space designation between the lots and the river instead of the previously submitted corridor between the lots and the railroad tracks.

Response: The Yakima River, its 100' buffer, and the associated Category II wetlands and their 150' buffer will be protected in this area. Whether this protected area is in a tract or within the lot areas with an Native Growth Protective Easement on them has not been determined.

•Complete a critical area study of the site so any impacts to critical areas can be appropriately mitigated for.

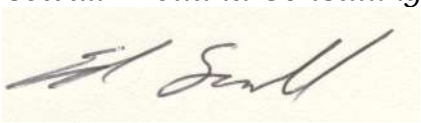
Response: This report serves as the critical area report for the areas of proposed development on this project.

In addition, during at telephone conversation with Jennifer Nelson of WDFW, she noted WDFW data indicated the potential of western gray squirrel habitat/ Oregon White oak on or near the site as some had been identified further east near the mouth of the Teanaway River.

Response: No western gray squirrels were observed on the site, nor was any habitat for this species noted. No areas of Oregon white oak were found on or near the site.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com .

Sincerely,
Sewall Wetland Consulting, Inc.



Ed Sewall
Senior Wetlands Ecologist PWS #212

Attached: Data sheets
Rating Form

REFERENCES

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

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Wetland name or number_____

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Walla Wet A Date of site visit: 4-13-20

Rated by SH Sandy Trained by Ecology? Yes ✓ No___ Date of training_____

HGM Class Used for Rating_____ Unit 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 _____

OVERALL WETLAND CATEGORY II

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
	Circle the	*appropriate*	*ratings*
Site Potential	H (M) L	H M (L)	H (M) L
Landscape Potential	H (M) L	H (M) L	H (M) L
Value	H M (L)	H (M) L	H (M) L
Score Based on Ratings	5	5	8

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 *Circle the appropriate category*
Vernal Pools	II III
Alakali	I
Wetland with high conservation value	I
Bog	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	

Wetland name or number A

Maps and figures required to answer questions correctly (Eastern Washington)

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet (*can be added to map of hydroperiods*)	D 1.1, D1.4	
Boundary of 150 ft buffer (*can be added to another figure*)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (*can be added to map of hydroperiods*)	H1.3.1	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (*can be added to another figure*)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (*can be added to another figure*)	R 4.1	
Polygon of area 1km from wetland edge -including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	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 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (*can be added to another figure*)	L 2.2	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above*)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number_____

HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

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 wetland 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 acres (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.
   - ___Does the water leaves the wetland **without being impounded**?

   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 <3ft diameter and less than 1 foot deep).

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

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 ten years.

   NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

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

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. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE 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 your wetland. 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 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
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

If you are unable still 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_____

DEPRESSIONAL WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.		Points (only 1 score per box)
D 1.0 Does the wetland unit have the potential to improve water quality?		
D 1.1 Characteristics of surface water flows out of the wetland unit:		
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	3
Wetland has a permanently flowing surface outlet	points = 1	
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions of soils)*		0
YES points = 3	NO (points = 0)	
D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	(points = 5)	
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1	5
Wetland has persistent, ungrazed vegetation <1/10 of area	points = 0	
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 > ⅓ total area of wetland	points = 3	
Area seasonally ponded is ¼ - ⅓ total area of wetland	(points = 1)	1
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	9

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 at the site?		
D2.1 Does the Wetland unit receive stormwater discharges?	(Yes = 1) No = 0	1
D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants	(Yes = 1) No = 0	1
D2.3 Are there are septic systems within 250 ft of the wetland unit?	Yes = 1 (No = 0)	0
D2.4 Are there are other sources of pollutants coming into the wetland that are not listed in questions D2.1 – D2.3? Source_____	Yes = 1 (No = 0)	0
Total for D 2	Add the points in the boxes above	2

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?		
D3.1 Does the unit discharge directly (within 1 mile) to a stream, river, or lake that is on the 303dlist?	Yes = 1 (No = 0)	
D 3.2 Is the unit in a basin or sub-basin where water quality is an issue in some aquatic resource (303d list, eutrophic lakes, problems with nuisance and toxic algae)?	Yes = 1 (No = 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 unit 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

Wetland name or number A

DEPRESSIONAL WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion.		Points (only 1 score per box)
D 4. 0 Does the wetland unit have the potential to reduce flooding and erosion?		
D 4.1 Characteristics of surface water flows out of the wetland unit:		
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	(points = 4)	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing surface outlet	points = 0	4
(if outlet is a ditch and not permanently flowing treat unit as "intermittently flowing")		
D 4.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).*		
Seasonal ponding: => 3 ft above the lowest point in unit or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in unit or the surface of permanent ponding	points = 6	
The wetland is a "headwater" wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: <6 in orr unit has only saturated soils	(points = 0)	0
Total for D 4	Add the points in the boxes above	4

Rating of Site Potential **If score is:** **12 – 16 = H** **6 - 11 = M** **(0 - 5 = L)**
Record the rating on the first page

D 5.0 Does the landscape have the potential to support hydrologic functions at the site?		
D5.1 Does the unit receive any stormwater discharges?	(Yes = 1) No = 0	1
D5. Is >10% of the land use within 150 ft of the wetland in a land uses that generates runoff?	Yes = 1 (No = 0)	0
D 5.3 Is more than 25% of the contributing basin of the wetland unit covered with intensive human land uses?	Yes = 1 (No = 0)	0
Total for D 5	Add the points in the boxes above	1

Rating of Landscape Potential **If score is:** **3 = H** **(1,2 = M)** **0 = L**
Record the rating on the first page

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the unit is in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. *Do not add points.* *Choose the highest score if more than one condition is met.*		
☐ The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g. salmon redds), AND		
o Damage occurs in sub-basin that is immediately downgradient of unit	points=2	
o Damage occurs in a sub-basin further down-gradient	(points = 1)	
☐ 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.		
Explain why _____	points = 0	1
☐ There are no problems with flooding downstream of the unit.	points = 0	
D 6.2 Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 (No = 0)	0
Total for D 6	Add the points in the boxes above	1

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

Wetland name or number_____

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. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ acre or >= 10% of the unit if unit is < 2.5 acres* ___Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ___Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover ___Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover ___Scrub/shrub (areas where shrubs have >30% cover) 4-6 checks points = 3 ___Forested (areas where trees have >30% cover) 3 checks points = 2 2 checks points = 1 1 check points = 0	2
H 1.2. Is one of the vegetation types "aquatic bed?" YES = 1 point NO = 0 points	0
H 1.3. Surface Water H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & **go to H 1.4** NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent, and unvegetate,d stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points	3
H 1.4. Richness of Plant Species Count the number of plant species in the wetland that cover at least 10 ft^2. (*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 Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* # of species ____ Scoring: > 9 species = 2 points 4-9 species = 1 point < 4 species = 0 points	2
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion between types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, medium, low, or none. *Use map of Cowardin plant classes prepared for questions H1.1 and map of open water from H1.3* **None** = 0 points **Low** = 1 point **Moderate** = 2 points **High** = 3 points **High** = 3 points riparian braided channels with 2 classes = High NOTE: If you have four or more classes or three plants classes and open water the rating is always "high".	Figure__ 1

Wetland name or number A

H 1.6. Special Habitat Features: *Check the habitat features that are present in the wetland unit. The number of checks is the score.* ___Loose rocks larger than 4" **or** large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. ___Cattails or bulrushes are present within the unit. ___Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. ___Emergent or shrub vegetation in areas that are permanently inundated/ponded. ___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 ___Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	2
H 1. TOTAL Score - Add the check marks in the box above	10
Rating of Site Potential **If score is:** **12 – 16 = H** **6 - 11 = M** **0 - 5 = L** *Record the rating on the first page*	

H 2.0 . Does the landscape have the potential to support habitat at the site?	
H 2.1 Accessible habitat (only area of habitat abutting wetland unit). *Calculate:* % undisturbed habitat 20 + [(% moderate and low intensity land uses)/2] 15 = 7.5 % If total accessible habitat is: > 1/3 (33.3%) of 1km circle (~100 hectares) points = 3 20 - 33% of 1km circle points = 2 10- 19% of 1km circle points = 1 <10% of 1km circle points = 0	2
H2.2 Undisturbed habitat in 1km circle around unit. If: Undisturbed habitat > 50% of circle points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of circle points = 0	3
H2.3 Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use points = (- 2) Does not meet criterion above points = 0	0
H 2.4 ☐ The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. *(Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs)* points = 3	0
Total for H 2 Add the points in the boxes above	5
Rating of Landscape Potential **If score is:** **4- 6 = H** **1-3 = M** **< 1 = L** *Record the rating on the first page*	

H 3.0 Is the Habitat provided by the site valuable to society?	
H3.1Does the site provides habitat for species valued in laws, regulations or policies? *(choose the highest score)* Site meets ANY of the following criteria: points = 2 __It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) __It is a "priority area" for an individual WDFW species __It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources __It has 3 or more priority habitats within 100m (see Appendix B) __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 Site has 1 or 2 priority habitats within 100m (see Appendix B) points = 1 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_____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit 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 units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools Is the wetland unit **less than 4000 ft²**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 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). — 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. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ⅓ of the plant cover consists of species listed on Table 4 — 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. **YES = Category I** NO – *not an alkali wetland*	**Cat. I**

Wetland name or number A

SC 3.0 Wetlands with High Conservation Value (WHCV)	
SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value? YES - Go to SC 2.2 NO – Go to SC 2.3 SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I NO = not a WHCV SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf YES____ – contact WNHP/DNR and go to SC 2.4 NO = not a WHCV SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site? YES = Category I NO ____not an WHCV	**Cat. I**
SC 4.0 Bogs and Calcareous Fens Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. *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.* SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils)? Yes - go to SC 4.3 No - go to SC 4.2 SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches 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 SC 4.3 No - *Is not a bog for rating* SC 4.3. Does an area within the unit 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 – Category I bog No - go to SC 4.4 *NOTE: 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" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.* SC 4.4 Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's 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 – Category I bog** NO – go to question SC 4.5 **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 – Is a Calcareous Fen for purpose of rating No - go to Question 6 6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met: • Marl deposits (calcium carbonate ($CaCO_3$) precipitate) occur on the soil surface or plant stems • The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland **Yes – Is a Category I calcareous fen** No - Is not a calcareous fen	**Cat. I** **Cat. I**

Wetland name or number A

SC 5.0 Forested Wetlands Does the wetland unit have an area of forest rooted within its boundary that meets **at least one** of the following three criteria? *(Continue only if you have identified a forested class is present in question H 1.1)* • The wetland is within the "100 year" floodplain of a river or stream • aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see definitions in question H3.1)* YES = go to SC 5.1 NO –*not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees *(see Table 7)* YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species. YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. *(see Table 7)* YES = Category II NO = go to SC 5.5	**Cat. II**
SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	N/A

Wetland name or number_____

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)

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

___**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

___**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 p. 152*).

___**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 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 – 3 snags/acre) that are > 30-35 cm (12-14 in) 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 53 cm (21 in) 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:** Woodlands 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 7.6 m (25 ft) high and occurring below 5000 ft.

___**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), 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 > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) 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 needlegrass (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.

Wetland name or number_____

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wallace Wet B Date of site visit: 4-13-20

Rated by EJ Smith Trained by Ecology? Yes ✓ No___ Date of training_____

HGM Class Used for Rating_____ Unit 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 _____

OVERALL WETLAND CATEGORY III

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
	Circle the appropriate ratings		
Site Potential	H (M) L	H M (L)	(H) M L
Landscape Potential	H M (L)	H M (L)	(H) M L
Value	H M (L)	H (M) L	(H) M L
Score Based on Ratings	4	4	9

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 *Circle the appropriate category*	
Vernal Pools	II	III
Alakali	I	
Wetland with high conservation value	I	
Bog	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above		

Wetland name or number_____

Maps and figures required to answer questions correctly (Eastern Washington)

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet (*can be added to map of hydroperiods*)	D 1.1, D1.4	
Boundary of 150 ft buffer (*can be added to another figure*)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (*can be added to map of hydroperiods*)	H1.3.1	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (*can be added to another figure*)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (*can be added to another figure*)	R 4.1	
Polygon of area 1km from wetland edge -including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	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 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (*can be added to another figure*)	L 2.2	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above*)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

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 wetland 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 acres (8 ha) in size
   - ___At least 20% 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.
   - ___Does the water leaves the wetland **without being impounded**?

   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 <3ft diameter and less than 1 foot deep).

   NO - go to 3 YES – The wetland class is **Slope**
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 ten years.

   NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

   NO - go to 4 YES – The wetland class is **Riverine**
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. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE 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 your wetland. 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 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
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

If you are unable still 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 B

DEPRESSIONAL WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.		Points (only 1 score per box)
D 1.0 Does the wetland unit have the potential to improve water quality?		
D 1.1 Characteristics of surface water flows out of the wetland unit: 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 surface outlet points = 1		3
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions of soils)* YES points = 3 NO points = 0		0
D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation for > 2/3 of area points = 5 Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area points = 3 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area points = 1 Wetland has persistent, ungrazed vegetation <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 > ½ total area of wetland points = 3 Area seasonally ponded is ¼ - ½ total area of wetland points = 1 Area seasonally ponded is < ¼ 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 at the site?		
D2.1 Does the Wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants	Yes = 1 No = 0	0
D2.3 Are there are septic systems within 250 ft of the wetland unit?	Yes = 1 No = 0	0
D2.4 Are there are other sources of pollutants coming into the wetland that are not listed in questions D2.1 – D2.3? 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?		
D3.1 Does the unit discharge directly (within 1 mile) to a stream, river, or lake that is on the 303dlist?	Yes = 1 No = 0	0
D 3.2 Is the unit in a basin or sub-basin where water quality is an issue in some aquatic resource (303d 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 unit 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*		

Wetland name or number B

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

D 5.0 Does the landscape have the potential to support hydrologic functions at the site?		
D5.1 Does the unit receive any stormwater discharges?	Yes = 1 No = 0	0
D5. Is >10% of the land use within 150 ft of the wetland in a land uses that generates runoff?	Yes = 1 No = 0	0
D 5.3 Is more than 25% of the contributing basin of the wetland unit covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0
Rating of Landscape Potential If score is: 3 = H 1,2 = M 0 = L *Record the rating on the first page*		

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the unit is in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. *Do not add points. Choose the highest score if more than one condition is met.* ☐ The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g. salmon redds), AND o Damage occurs in sub-basin that is immediately downgradient of unit points=2 o Damage occurs in a sub-basin further down-gradient points = 1 ☐ 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. *Explain why* _____ points = 0 ☐ There are no problems with flooding downstream of the unit. points = 0		1
D 6.2 Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	1
Rating of Value If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*		

Wetland name or number B

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ acre or >= 10% of the unit if unit is < 2.5 acres* ___Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ___Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover ___Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover ✓ Scrub/shrub (areas where shrubs have >30% cover) 4-6 checks points = 3 ___Forested (areas where trees have >30% cover) 3 checks points = 2 2 checks points = 1 1 check points = 0	2
H 1.2. Is one of the vegetation types "aquatic bed?" YES = 1 point NO = 0 points	0
H 1.3. Surface Water H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre OR 10% of its area during the March to early June OR in August to the end of September? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & go to H 1.4 NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent, and unvegetate,d stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points	3
H 1.4. Richness of Plant Species Count the number of plant species in the wetland that cover at least 10 ft². (*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 Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow flag iris, and Salt Cedar (Tamarisk)* # of species ____ Scoring: >9 species = 2 points 4-9 species = 1 point < 4 species = 0 points	2
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion between types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, medium, low, or none. *Use map of Cowardin plant classes prepared for questions H1.1 and map of open water from H1.3* **None** = 0 points **Low** = 1 point **Moderate** = 2 points **High** = 3 points **High** = 3 points riparian braided channels with 2 classes = High NOTE: If you have four or more classes or three plants classes and open water the rating is always "high".	Figure__ 2

Wetland name or number B

H 1.6. Special Habitat Features: *Check the habitat features that are present in the wetland unit. The number of checks is the score.* ✓ Loose rocks larger than 4" or large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. ✓ Cattails or bulrushes are present within the unit. ___Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. ___Emergent or shrub vegetation in areas that are permanently inundated/ponded. ___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 ___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	3
H 1. TOTAL Score - Add the check marks in the box above	12
Rating of Site Potential If score is: **12 – 16 = H** 6 - 11 = M 0 - 5 = L *Record the rating on the first page*	

H 2.0 . Does the landscape have the potential to support habitat at the site?	
H 2.1 Accessible habitat (only area of habitat abutting wetland unit). *Calculate:* % undisturbed habitat 25 + [(% moderate and low intensity land uses)/2] 15 = 33 % If total accessible habitat is: > 1/3 (33.3%) of 1km circle (~100 hectares) points = 3 20 - 33% of 1km circle points = 2 10- 19% of 1km circle points = 1 <10% of 1km circle points = 0	2
H2.2 Undisturbed habitat in 1km circle around unit. If: Undisturbed habitat > 50% of circle points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of circle points = 0	3
H2.3 Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use points = (- 2) Does not meet criterion above points = 0	0
H 2.4 ☐ The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. *(Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs)* points = 3	0
Total for H 2 Add the points in the boxes above	5
Rating of Landscape Potential If score is: **4- 6 = H** 1-3 = M < 1 = L *Record the rating on the first page*	

H 3.0 Is the Habitat provided by the site valuable to society?	
H3.1Does the site provides habitat for species valued in laws, regulations or policies? *(choose the highest score)* Site meets ANY of the following criteria: points = 2 ___It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ___It is a "priority area" for an individual WDFW species ___It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources ___It has 3 or more priority habitats within 100m (see Appendix B) ___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 Site has 1 or 2 priority habitats within 100m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	2
Rating of Value If score is: **2 = H** 1 = M 0 = L *Record the rating on the first page*	

Wetland name or number_____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit 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 units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools Is the wetland unit **less than 4000 ft²**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 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). — 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. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 4 — 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. **YES = Category I** NO – *not an alkali wetland*	**Cat. I**

Wetland name or number B

SC 3.0 Wetlands with High Conservation Value (WHCV)	
SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value? YES - Go to SC 2.2 NO – Go to SC 2.3 SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I NO = not a WHCV SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf YES____ – contact WNHP/DNR and go to SC 2.4 NO = not a WHCV SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site? YES = Category I NO____not an WHCV	**Cat. I**
SC 4.0 Bogs and Calcareous Fens Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. *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.* SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils)? Yes - go to SC 4.3 No - go to SC 4.2 SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches 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 SC 4.3 No - *Is not a bog for rating* SC 4.3. Does an area within the unit 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 – Category I bog No - go to SC 4.4 *NOTE: 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" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.* SC 4.4 Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's 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 – Category I bog** NO – go to question SC 4.5 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 – Is a Calcareous Fen for purpose of rating No - go to Question 6 6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met: • Marl deposits (calcium carbonate (CaCO3) precipitate) occur on the soil surface or plant stems • The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland **Yes – Is a Category I calcareous fen** No - Is not a calcareous fen	**Cat. I** **Cat. I**

Wetland name or number B

SC 5.0 Forested Wetlands Does the wetland unit have an area of forest rooted within its boundary that meets **at least one** of the following three criteria? (*Continue only if you have identified a forested class is present in question H 1.1*) • The wetland is within the "100 year" floodplain of a river or stream • aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see definitions in question H3.1)* YES = go to SC 5.1 NO –*not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (*see Table 7*) YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species. YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (*see Table 7*) ~~YES = Category II NO = go to SC 5.5~~	**Cat. II**
SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* **If you answered NO for all types enter "Not Applicable" on p.1**	NA

Wetland name or number_____

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)

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

___**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

___**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 p. 152*).

___**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 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 – 3 snags/acre) that are > 30-35 cm (12-14 in) 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 53 cm (21 in) 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:** Woodlands 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 7.6 m (25 ft) high and occurring below 5000 ft.

___**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), 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 > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) 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 needlegrass (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.

Wetland name or number_____

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wallace West C Date of site visit: 4-7-20

Rated by Ed Sarell Trained by Ecology? Yes__No___ Date of training_____

HGM Class Used for Rating Riverine Unit 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 _____

OVERALL WETLAND CATEGORY III

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
	Circle the appropriate ratings		
Site Potential	H (M) L	H M (L)	H (M) L
Landscape Potential	H (M) L	H (M) L	(H) M L
Value	H M (L)	H (M) L	(H) M L
Score Based on Ratings	5	5	8

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 *Circle the appropriate category*
Vernal Pools	II III
Alakali	I
Wetland with high conservation value	I
Bog	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	✓

Wetland name or number_____

Maps and figures required to answer questions correctly (Eastern Washington)

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet (*can be added to map of hydroperiods*)	D 1.1, D1.4	
Boundary of 150 ft buffer *(can be added to another figure)*	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water *(can be added to map of hydroperiods)*	H1.3.1	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	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 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer *(can be added to another figure)*	L 2.2	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number_____

HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

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, classify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire wetland 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 acres (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.
   ___Does the water leaves the wetland **without being impounded**?
   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 <3ft diameter and less than 1 foot deep).
   NO - go to 3 YES – The wetland class is **Slope**
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 ten years.
   NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.
   NO - go to 4 YES – The wetland class is **Riverine**
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. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE 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

Wetland name or number A

classes present within your wetland. 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 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
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

If you are unable still 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

RIVERINE WETLANDS **Water Quality Functions** - Indicators that site functions to improve water quality		Points (only 1 score per box)
R 1.0 Does the wetland unit have the potential to improve water quality?		
R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event		
Depressions cover >1/3 area of wetland	points = 6	
Depressions cover > 1/10 area of wetland	points = 3	
Depressions present but cover < 1/10 area of wetland	points = 1	6
No depressions present	points = 0	
R 1.2 Structure of plants in the unit (areas with >90% cover at person height; not Cowardin classes):		
Forest or shrub > 2/3 the area of the wetland	points = 10	
Forest or shrub 1/3 – 2/3 area of the wetland	points = 5	
Ungrazed, herbaceous plants > 2/3 area of wetland	points = 5	
Ungrazed herbaceous plants 1/3 – 2/3 area of wetland	points = 2	5
Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland	points = 0	
Total for R1	Add the points in the boxes above	11

Rating of Site Potential If score is: 12 – 16 = H | 6 - 11 = M | 0 - 5 = L
Record the rating on the first page

R 2.0 Does the landscape have the potential to support the water quality function at the site?		
R 2.1 Is the unit within an incorporated city or within its UGA?	Yes = 2 No = 0	0
R. 2.2 Does the contributing basin include a UGA or incorporated area?	Yes = 1 No = 0	0
R 2.3 Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1 No = 0	0
R 2.4 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants	Yes = 1 No = 0	1
R 2.5 Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1 – R 2.4? Source	Yes = 1 No = 0	1
Total for R 2	Add the points in the boxes above	

Rating of Landscape Potential If score is: 3 – 6 = H | 1 or 2 = M | 0 = L
Record the rating on the first page

R 3.0 Is the water quality improvement provided by the site valuable to society?		
R 3.1 Is the unit along a stream or river that is on the 303 d list or on a tributary that drains to one?	Yes = 1 No = 0	0
R 3.2 Does the river on stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
R 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 in which unit is found)*	Yes = 2 No = 0	0
Total for R 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

Wetland name or number C

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion		Points (only 1 score per box)
R 4.0 Does the wetland unit have the potential to reduce flooding and erosion?		
R 4.1 Characteristics of the overbank storage the unit provides: *Estimate the average width of the wetland unit perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of unit)/(average width of stream between banks).*		
If the ratio is more than 2	points = 10	
If the ratio is between 1 – 2	points = 8	
If the ratio is ½ - <1	points = 4	
If the ratio is ¼ - < ½	points = 2	8
If the ratio is < ¼	points = 1	
R 4.2 Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.* (polygons need to have >90% cover at person height NOT Cowardin classes):		
Forest or shrub for more than 2/3 the area of the wetland.	points = 6	
Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area	points = 4	
Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area	points = 2	4
Plants do not meet above criteria	points = 0	
Total for R 5	Add the points in the boxes above	12

Rating of Site Potential If score is: 12 – 16 = H | 6 - 11 = M | 0 - 5 = L
Record the rating on the first page

R 5.0 Does the landscape have the potential to support the hydrologic functions at the site?		
R5.1 Is the stream/river adjacent to the unit downcut?	Yes = 0 No = 1	1
R 5.2 Does the upgradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	0
R 5.3 Is The upgradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5	Add the points in the boxes above	1

Rating of Landscape Potential If score is: 3 = H | 1 or 2 = M | 0 = L
Record the rating on the first page

R 6.0 Are the hydrologic functions provided by the site valuable to society?		
R 6.1 Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.*		
The sub-basin immediately down-gradient of site has surface flooding problems that results in damage to human or natural resources	points = 2	
Surface flooding problems are in a basin further down-gradient	points = 1	1
No flooding problems anywhere downstream	points = 0	
R 6.2 Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for R 6	Add the points in the boxes above	1

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

Wetland name or number_____

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. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ acre or >= 10% of the unit if unit is < 2.5 acres* ___Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ___Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover ___Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover ___Scrub/shrub (areas where shrubs have >30% cover) 4-6 checks points = 3 ___Forested (areas where trees have >30% cover) 3 checks points = 2 2 checks points = 1 1 check points = 0	1
H 1.2. Is one of the vegetation types "aquatic bed?" YES = 1 point NO = 0 points	1
H 1.3. Surface Water H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre OR 10% of its area during the March to early June OR in August to the end of September? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & go to H 1.4 NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points	3
H 1.4. Richness of Plant Species Count the number of plant species in the wetland that cover at least 10 ft^2. (*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 Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* # of species ____ Scoring: > 9 species = 2 points 4-9 species = 1 point < 4 species = 0 points	1
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion between types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, medium, low, or none. *Use map of Cowardin plant classes prepared for questions H1.1 and map of open water from H1.3* **None** = 0 points **Low** = 1 point **Moderate** = 2 points **High** = 3 points **High** = 3 points riparian braided channels with 2 classes = High NOTE: If you have four or more classes or three plants classes and open water the rating is always "high".	Figure__ 2

Wetland name or number C

H 1.6. Special Habitat Features: *Check the habitat features that are present in the wetland unit. The number of checks is the score.* ___Loose rocks larger than 4" or large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. ___Cattails or bulrushes are present within the unit. ___Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. ___Emergent or shrub vegetation in areas that are permanently inundated/ponded. ___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 ___Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	3
H 1. TOTAL Score - Add the check marks in the box above	11
Rating of Site Potential **If score is:** **12 – 16 = H** **6 - 11 = M** **0 - 5 = L** *Record the rating on the first page*	

H 2.0 . Does the landscape have the potential to support habitat at the site?	
H 2.1 Accessible habitat (only area of habitat abutting wetland unit). *Calculate:* % undisturbed habitat 20 + [(% moderate and low intensity land uses)/2] 20 = 10 % If total accessible habitat is: > 1/3 (33.3%) of 1km circle (~100 hectares) points = 3 20 - 33% of 1km circle points = 2 10- 19% of 1km circle points = 1 <10% of 1km circle points = 0	2
H2.2 Undisturbed habitat in 1km circle around unit. If: Undisturbed habitat > 50% of circle points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of circle points = 0	2
H2.3 Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use points = (- 2) Does not meet criterion above points = 0	0
H 2.4 The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. *(Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs)* points = 3	0
Total for H 2 Add the points in the boxes above	4
Rating of Landscape Potential **If score is:** **4- 6 = H** **1-3 = M** **< 1 = L** *Record the rating on the first page*	

H 3.0 Is the Habitat provided by the site valuable to society?	
H3.1Does the site provides habitat for species valued in laws, regulations or policies? *(choose the highest score)* Site meets ANY of the following criteria: points = 2 ___It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ___It is a "priority area" for an individual WDFW species ___It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources ___It has 3 or more priority habitats within 100m (see Appendix B) ___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 Site has 1 or 2 priority habitats within 100m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	2
Rating of Value **If score is:** **2 = H** **1 = M** **0 = L** *Record the rating on the first page*	

Wetland name or number_____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit 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 units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools Is the wetland unit **less than 4000 ft²**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 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). — 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. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ⅓ of the plant cover consists of species listed on Table 4 — 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. **YES = Category I** NO – *not an alkali wetland*	**Cat. I**

Wetland name or number_____

SC 3.0 Wetlands with High Conservation Value (WHCV) SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value? YES - Go to SC 2.2 NO – Go to SC 2.3 SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I NO = not a WHCV SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf YES____ – contact WNHP/DNR and go to SC 2.4 NO = not a WHCV SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site? YES = Category I NO ___ not an WHCV	**Cat. I**
SC 4.0 Bogs and Calcareous Fens Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. *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.* SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils)? Yes - go to SC 4.3 No - go to SC 4.2 SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches 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 SC 4.3 No - *Is not a bog for rating* SC 4.3. Does an area within the unit 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 – Category I bog No - go to SC 4.4 *NOTE: 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" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.* SC 4.4 Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's 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 – Category I bog** NO – go to question SC 4.5 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 – Is a Calcareous Fen for purpose of rating No - go to Question 6 6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met: • Marl deposits (calcium carbonate ($CaCO_3$) precipitate) occur on the soil surface or plant stems • The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland **Yes – Is a Category I calcareous fen** No - Is not a calcareous fen	**Cat. I** **Cat. I**

Wetland name or number_____

SC 5.0 Forested Wetlands Does the wetland unit have an area of forest rooted within its boundary that meets **at least one** of the following three criteria? (*Continue only if you have identified a forested class is present in question H 1.1*) • The wetland is within the "100 year" floodplain of a river or stream • aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see definitions in question H3.1)* YES = go to SC 5.1 NO = *not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (*see Table 7*) YES = Category I NO = go to SC 5.2	Cat. I
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species. YES = Category I NO = go to SC 5.3	Cat. I
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (*see Table 7*) YES = Category II NO = go to SC 5.5	Cat. II
SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	Cat. II
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	NA

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)

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

___**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

___**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 p. 152*).

___**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 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) that are > 30-35 cm (12-14 in) 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 53 cm (21 in) 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:** Woodlands 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 7.6 m (25 ft) high and occurring below 5000 ft.

___**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), 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 > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) 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 needlegrass (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.

Wetland name or number_____

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wallace Wet D Date of site visit: 4-7-20

Rated by Ed Sunell Trained by Ecology? Yes No Date of training_____

HGM Class Used for Rating Riverine Unit 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 _____

OVERALL WETLAND CATEGORY II

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
	Circle the appropriate ratings		
Site Potential	H (M) L	(H) M L	H (M) L
Landscape Potential	H (M) L	H (M) L	(H) M L
Value	H M (L)	(H) M L	(H) M L
Score Based on Ratings	5	8	8

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 *Circle the appropriate category*
Vernal Pools	II III
Alakali	I
Wetland with high conservation value	I
Bog	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	✓

Wetland name or number D

Maps and figures required to answer questions correctly (Eastern Washington)

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet (*can be added to map of hydroperiods*)	D 1.1, D1.4	
Boundary of 150 ft buffer (*can be added to another figure*)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (*can be added to map of hydroperiods*)	H1.3.1	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (*can be added to another figure*)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (*can be added to another figure*)	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	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 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (*can be added to another figure*)	L 2.2	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above*)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

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 wetland 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 acres (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.
   ___Does the water leaves the wetland **without being impounded**?
   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 <3ft diameter and less than 1 foot deep).
   NO - go to 3 YES – The wetland class is **Slope**
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 ten years.
   NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.
   NO - go to 4 YES – The wetland class is **Riverine**
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. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE 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 your wetland. 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 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
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

If you are unable still 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_____

RIVERINE WETLANDS **Water Quality Functions** - Indicators that site functions to improve water quality	Points (only 1 score per box)
R 1.0 Does the wetland unit have the potential to improve water quality?	
R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event Depressions cover >1/3 area of wetland — points = 6 Depressions cover > 1/10 area of wetland — points = 3 Depressions present but cover < 1/10 area of wetland — points = 1 No depressions present — points = 0	6
R 1.2 Structure of plants in the unit (areas with >90% cover at person height; **not** Cowardin classes): Forest or shrub > 2/3 the area of the wetland — points = 10 Forest or shrub 1/3 – 2/3 area of the wetland — points = 5 Ungrazed, herbaceous plants > 2/3 area of wetland — points = 3 Ungrazed herbaceous plants 1/3 – 2/3 area of wetland — points = 2 Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland — points = 0	5
Total for R1 — Add the points in the boxes above	11

Rating of Site Potential **If score is:** **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**
Record the rating on the first page

R 2.0 Does the landscape have the potential to support the water quality function at the site?		
R 2.1 Is the unit within an incorporated city or within its UGA?	Yes = 2 No = 0	0
R. 2.2 Does the contributing basin include a UGA or incorporated area?	Yes = 1 No = 0	1
R 2.3 Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1 No = 0	0
R 2.4 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants	Yes = 1 No = 0	1
R 2.5 Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1 – R 2.4? Source_____	Yes = 1 No = 0	0
Total for R 2 — Add the points in the boxes above		2

Rating of Landscape Potential **If score is:** **3 – 6 = H** **1 or 2 = M** **0 = L**
Record the rating on the first page

R 3.0 Is the water quality improvement provided by the site valuable to society?		
R 3.1 Is the unit along a stream or river that is on the 303 d list or on a tributary that drains to one?	Yes = 1 No = 0	
R 3.2 Does the river on stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	
R 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 in which unit is found)*	Yes = 2 No = 0	0
Total for R 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

Wetland name or number D

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
R 4.0 Does the wetland unit have the potential to reduce flooding and erosion?	
R 4.1 Characteristics of the overbank storage the unit provides: *Estimate the average width of the wetland unit perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of unit)/(average width of stream between banks).* If the ratio is more than 2 — points = 10 If the ratio is between 1 – 2 — points = 8 If the ratio is ½ - <1 — points = 4 If the ratio is ¼ - < ½ — points = 2 If the ratio is < ¼ — points = 1	8
R 4.2 Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.* (polygons need to have >90% cover at person height NOT Cowardin classes): Forest or shrub for more than 2/3 the area of the wetland. — points = 6 Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area — points = 4 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area — points = 2 Plants do not meet above criteria — points = 0	6
Total for R 5 — Add the points in the boxes above	14

Rating of Site Potential **If score is:** **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**
Record the rating on the first page

R 5.0 Does the landscape have the potential to support the hydrologic functions at the site?		
R5.1 Is the stream/river adjacent to the unit downcut?	Yes = 0 No = 1	1
R 5.2 Does the upgradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3 Is The upgradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5 — Add the points in the boxes above		2

Rating of Landscape Potential **If score is:** **3 = H** **1 or 2 = M** **0 = L**
Record the rating on the first page

R 6.0 Are the hydrologic functions provided by the site valuable to society?	
R 6.1 Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.* The sub-basin immediately down-gradient of site has surface flooding problems that results in damage to human or natural resources — points = 2 Surface flooding problems are in a basin further down-gradient — points = 1 No flooding problems anywhere downstream — points = 0	2
R 6.2 Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for R 6 — Add the points in the boxes above	2

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

Wetland name or number_____

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ acre or >= 10% of the unit if unit is < 2.5 acres* ___Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ___Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover ___Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover ___Scrub/shrub (areas where shrubs have >30% cover) 4-6 checks points = 3 ___Forested (areas where trees have >30% cover) 3 checks points = 2 2 checks points = 1 1 check points = 0	1
H 1.2. Is one of the vegetation types "aquatic bed?" YES = 1 point NO = 0 points	0
H 1.3. Surface Water H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Note: answer YES for Lake-fringe wetlands* YES = 3 points **& go to H 1.4** NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent, and unvegetate,d stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points	3
H 1.4. Richness of Plant Species Count the number of plant species in the wetland that cover at least 10 ft^2. (*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 Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* # of species ____ Scoring: > 9 species = 2 points 4-9 species = 1 point < 4 species = 0 points	1
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion between types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, medium, low, or none. *Use map of Cowardin plant classes prepared for questions H1.1 and map of open water from H1.3* **None** = 0 points **Low** = 1 point **Moderate** = 2 points **High** = 3 points **High** = 3 points riparian braided channels with 2 classes = High NOTE: If you have four or more classes or three plants classes and open water the rating is always "high".	Figure__ 2

Wetland name or number D

H 1.6. Special Habitat Features: *Check the habitat features that are present in the wetland unit. The number of checks is the score.* ___Loose rocks larger than 4" **or** large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. ___Cattails or bulrushes are present within the unit. ___Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. ___Emergent or shrub vegetation in areas that are permanently inundated/ponded. ___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 ___Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	2
H 1. TOTAL Score - Add the check marks in the box above	9
Rating of Site Potential **If score is:** **12 – 16 = H** **6 - 11 = M** **0 - 5 = L** *Record the rating on the first page*	

H 2.0 . Does the landscape have the potential to support habitat at the site?	
H 2.1 Accessible habitat (only area of habitat abutting wetland unit). *Calculate:* % undisturbed habitat 15 + [(% moderate and low intensity land uses)/2] 10 = 20 % If total accessible habitat is: > 1/3 (33.3%) of 1km circle (~100 hectares) points = 3 20 - 33% of 1km circle points = 2 10- 19% of 1km circle points = 1 <10% of 1km circle points = 0	2
H2.2 Undisturbed habitat in 1km circle around unit. If: Undisturbed habitat > 50% of circle points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of circle points = 0	3
H2.3 Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use points = (- 2) Does not meet criterion above points = 0	0
H 2.4 ☒ The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. *(Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs)* points = 3	0
Total for H 2 Add the points in the boxes above	5
Rating of Landscape Potential **If score is:** **4- 6 = H** **1-3 = M** **< 1 = L** *Record the rating on the first page*	

H 3.0 Is the Habitat provided by the site valuable to society?	
H3.1Does the site provides habitat for species valued in laws, regulations or policies? *(choose the highest score)* Site meets ANY of the following criteria: points = 2 __It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) __It is a "priority area" for an individual WDFW species __It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources __It has 3 or more priority habitats within 100m (see Appendix B) __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 Site has 1 or 2 priority habitats within 100m (see Appendix B) points = 1 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_____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit 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 units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools Is the wetland unit **less than 4000 ft²**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for ~~less than 120 days during~~ the "wet" season. YES = Go to SC 1.1 NO - *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 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). — 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. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 4 — 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. **YES = Category I** NO – *not an alkali wetland*	**Cat. I**

Wetland name or number D

SC 3.0 Wetlands with High Conservation Value (WHCV) SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value? YES - Go to SC 2.2 NO – Go to SC 2.3 SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I NO = not a WHCV SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf YES____ – contact WNHP/DNR and go to SC 2.4 NO = not a WHCV SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site? YES = Category I NO ____not an WHCV	**Cat. I**
SC 4.0 Bogs and Calcareous Fens Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. *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.* SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils)? Yes - go to SC 4.3 No - go to SC 4.2 SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches 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 SC 4.3 No - *Is not a bog for rating* SC 4.3. Does an area within the unit 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 – Category I bog No - go to SC 4.4 *NOTE: 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" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.* SC 4.4 Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's 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 – Category I bog** NO – go to question SC 4.5 **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 – Is a Calcareous Fen for purpose of rating No - go to Question 6 6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met: • Marl deposits (calcium carbonate (CaCO3) precipitate) occur on the soil surface or plant stems • The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland **Yes – Is a Category I calcareous fen** No - Is not a calcareous fen	**Cat. I** **Cat. I**

Wetland name or number P

SC 5.0 Forested Wetlands Does the wetland unit have an area of forest rooted within its boundary that meets **at least one** of the following three criteria? (*Continue only if you have identified a forested class is present in question H 1.1*) • The wetland is within the "100 year" floodplain of a river or stream • aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see definitions in question H3.1)* YES = go to SC 5.1 NO –*not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (*see Table 7*) YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species. YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (*see Table 7*) YES = Category II NO = go to SC 5.5	**Cat. II**
SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	NA

Wetland name or number_____

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)

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

___**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

___**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 p. 152*).

___**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 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 – 3 snags/acre) that are > 30-35 cm (12-14 in) 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 53 cm (21 in) 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:** Woodlands 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 7.6 m (25 ft) high and occurring below 5000 ft.

___**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

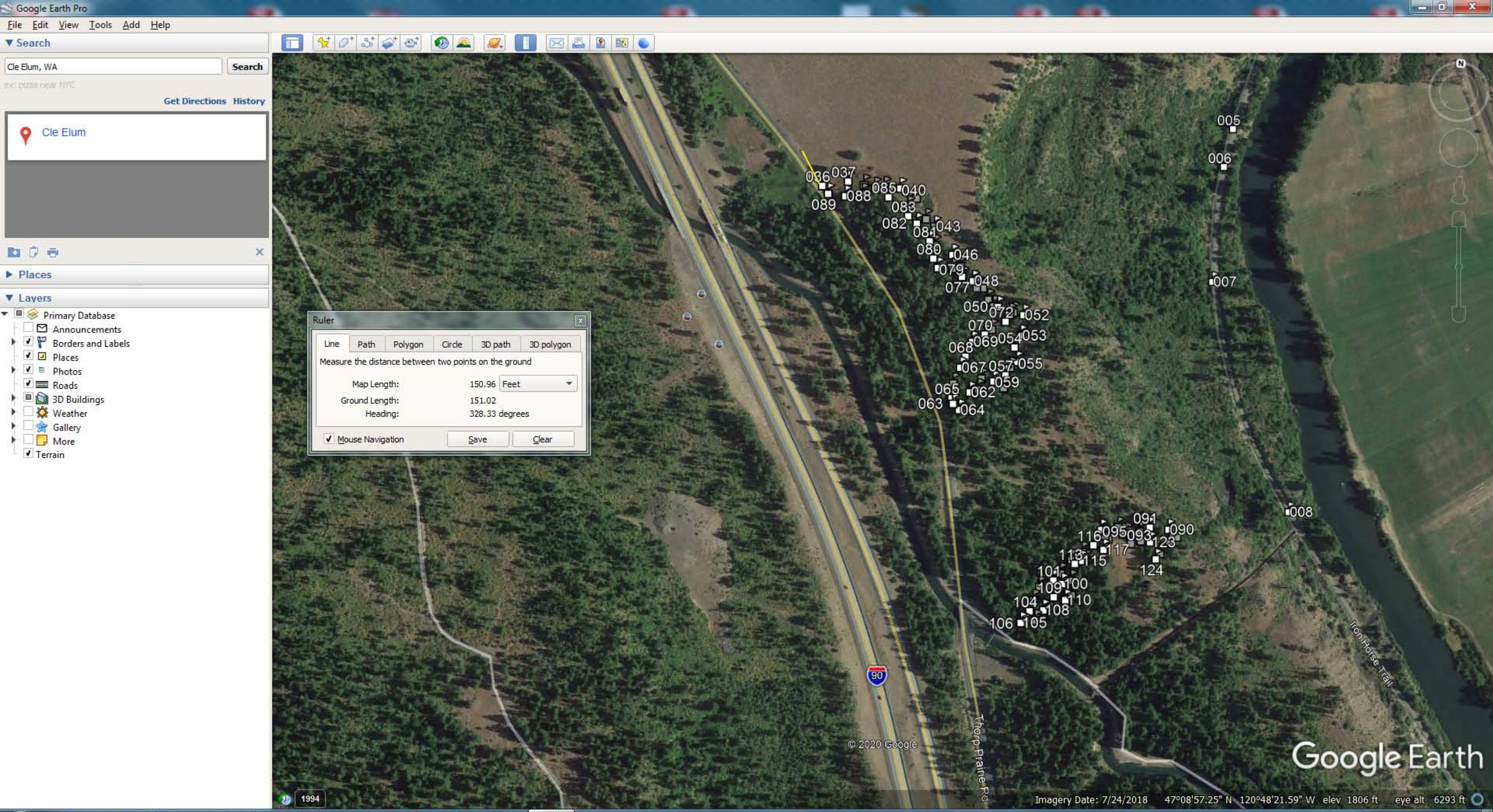
___**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) 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 needlegrass (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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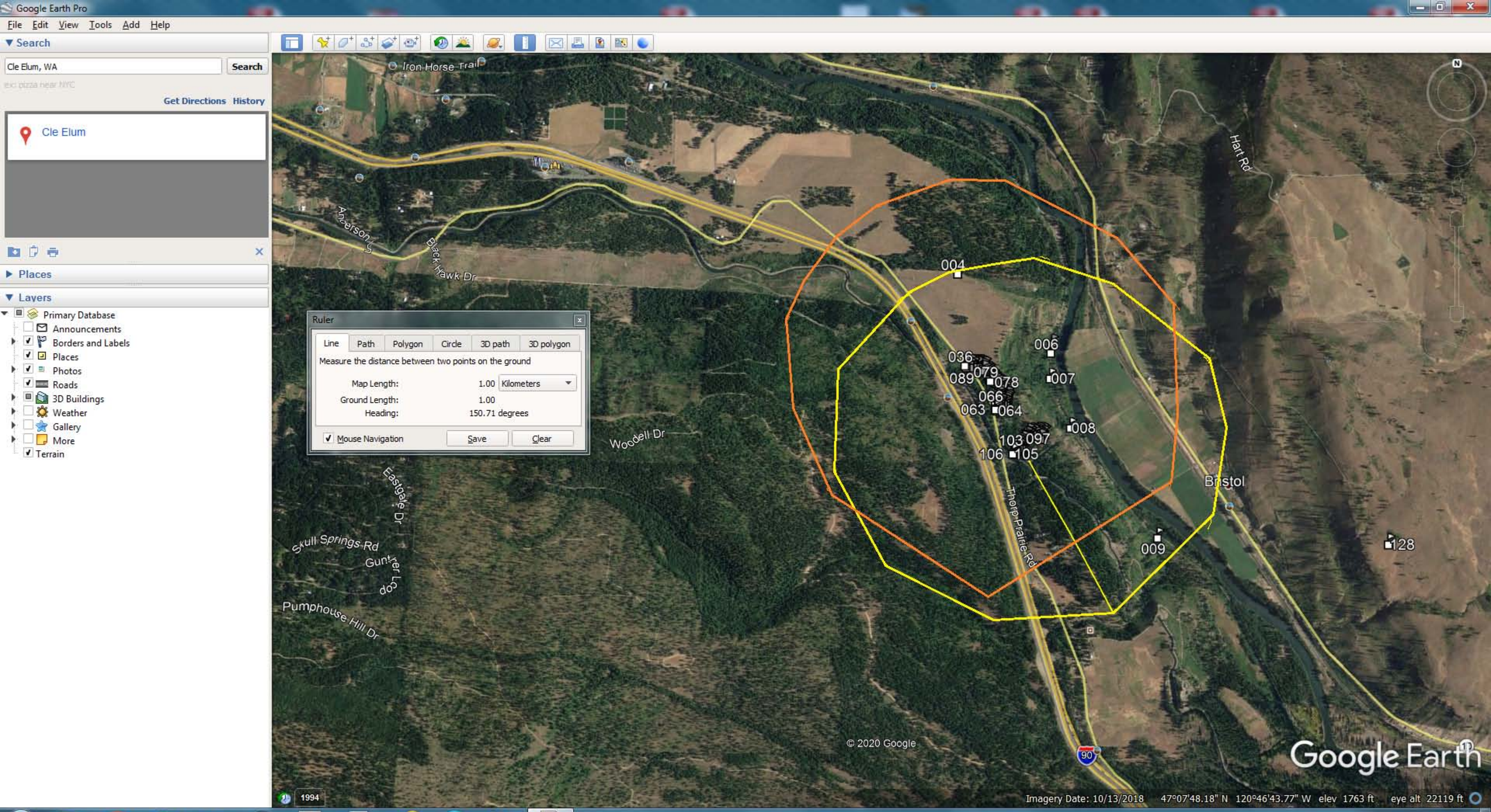
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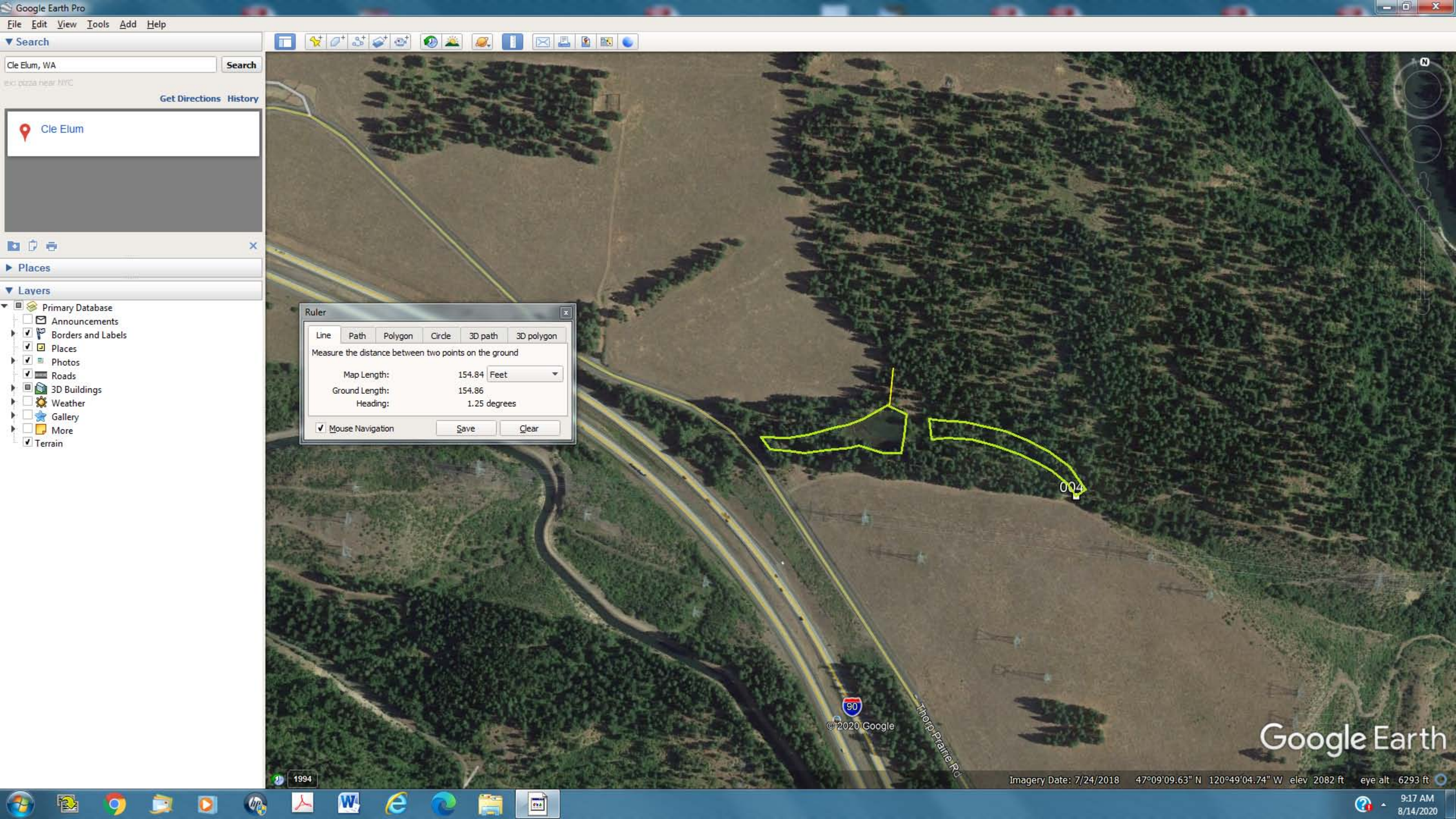
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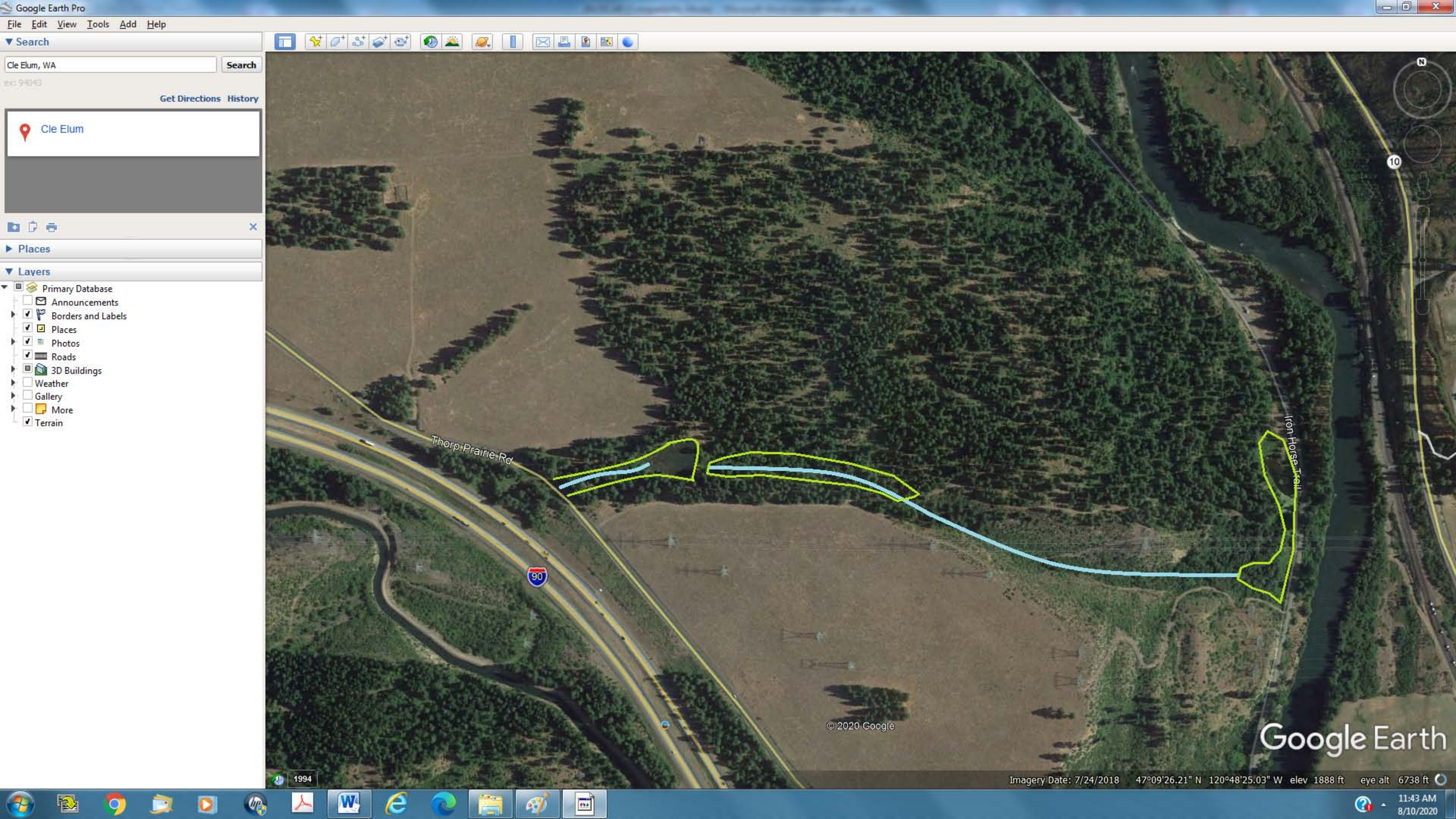
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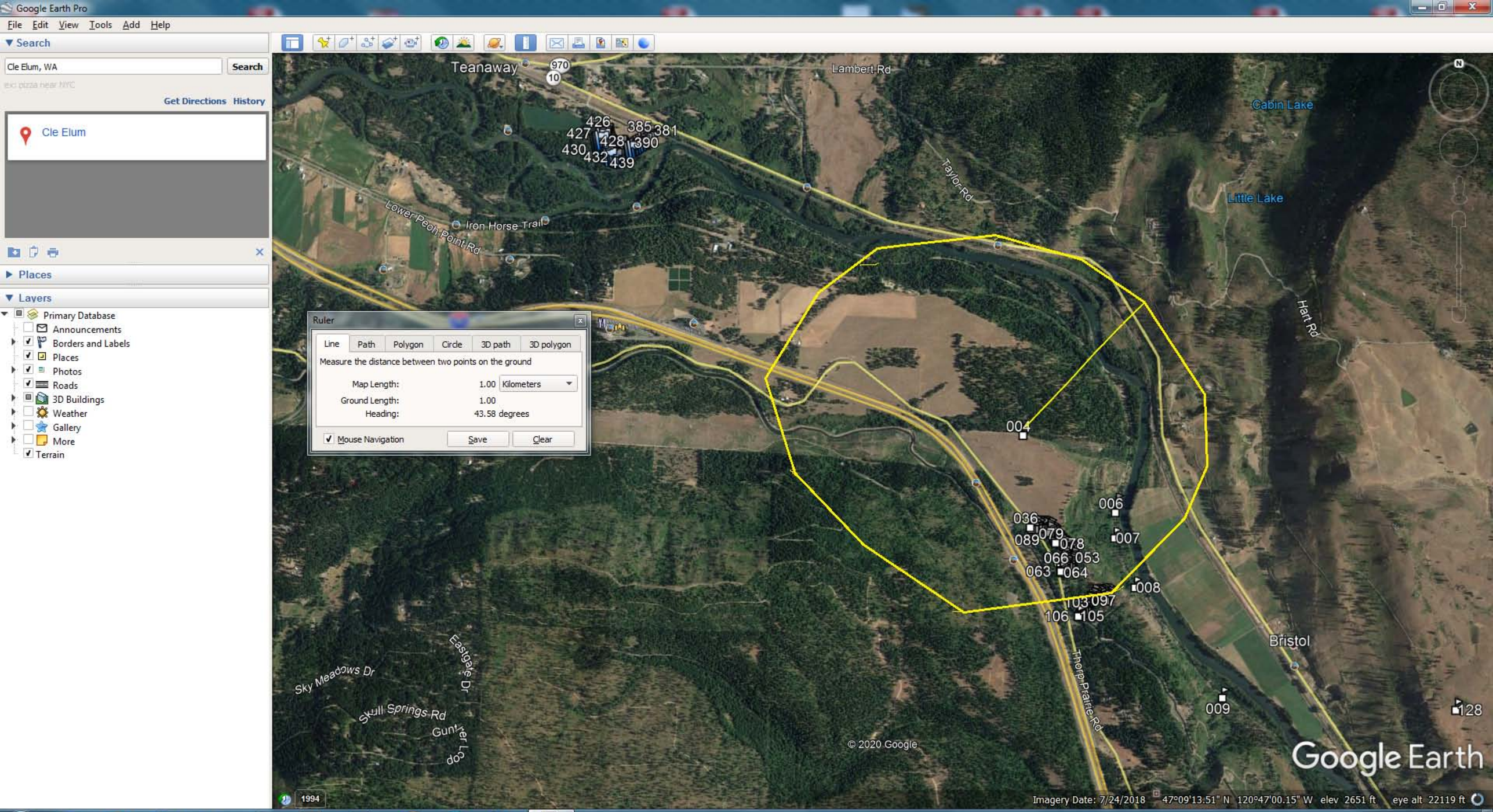
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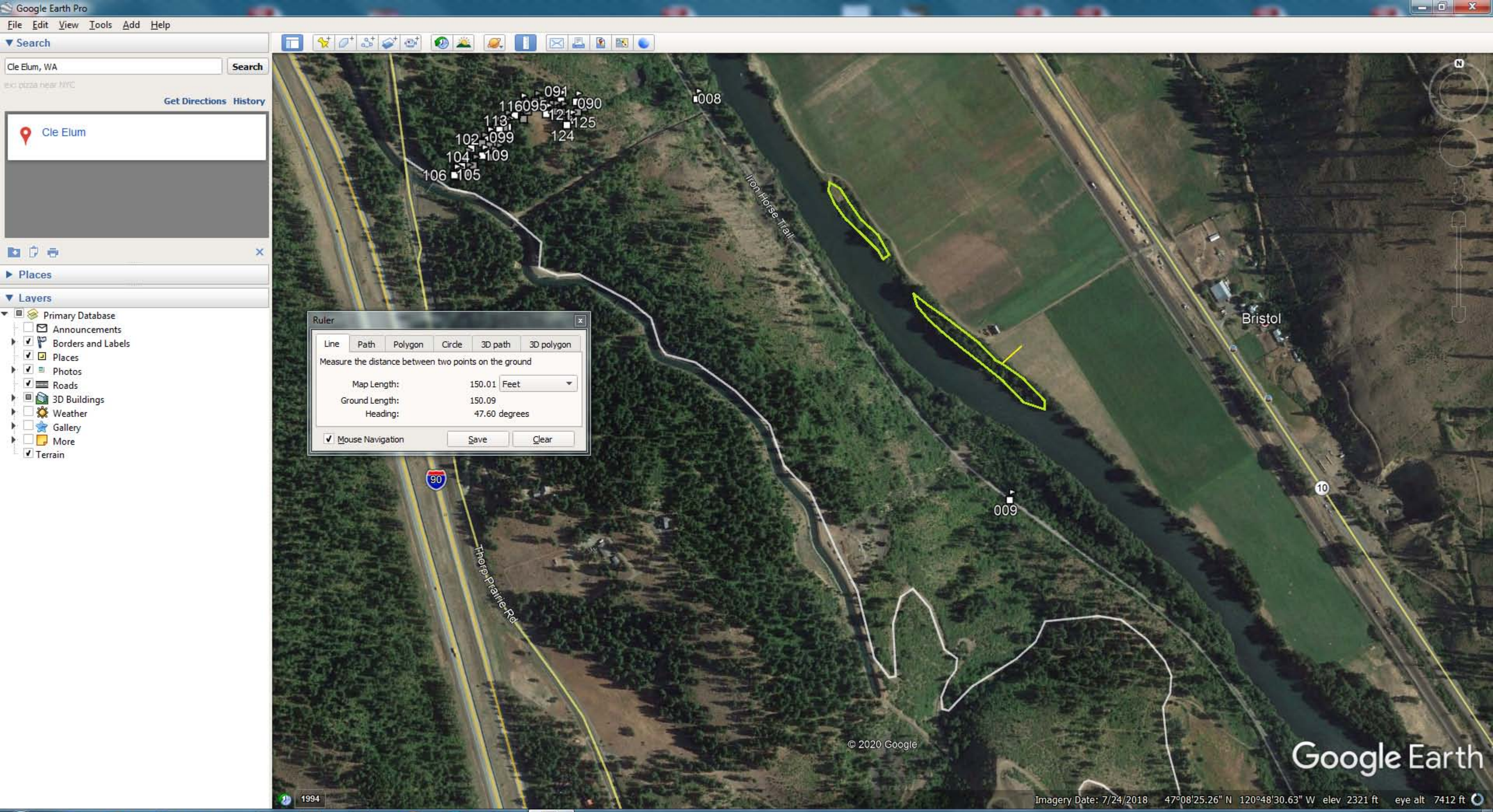
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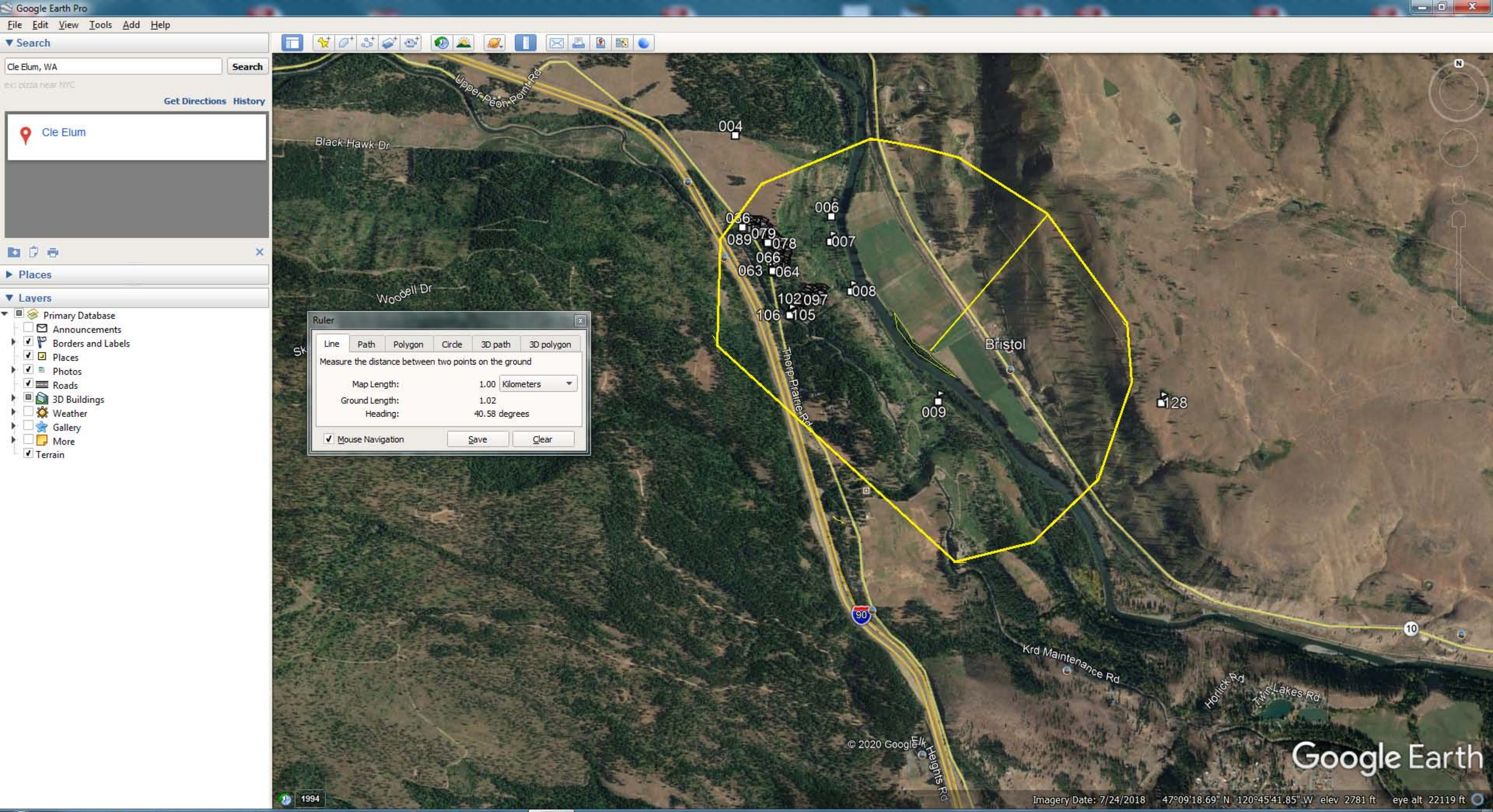
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Assessed Waters/Sediment

Water

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- Category 4C
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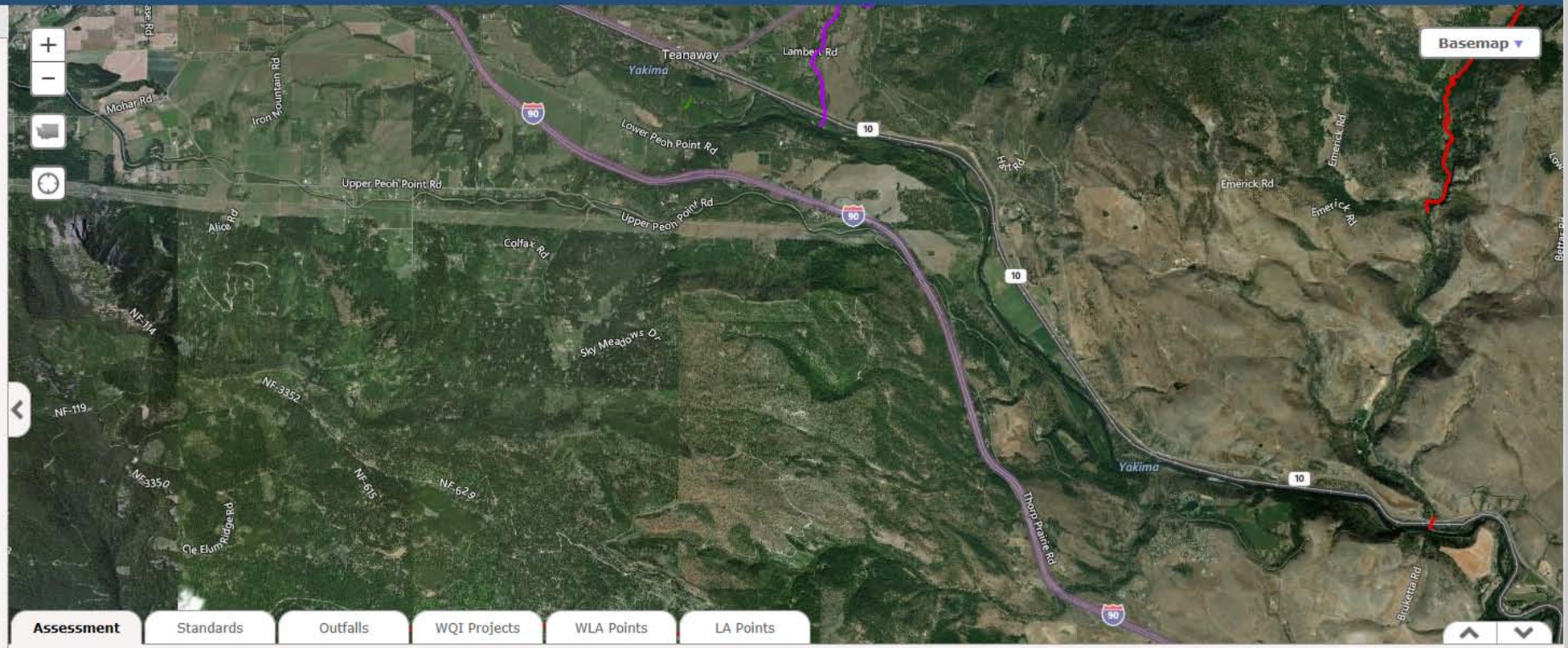

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