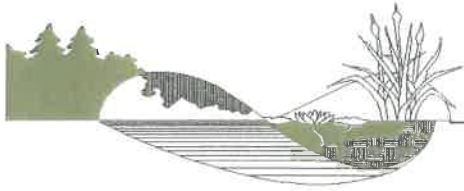


**PALOMINO FIELDS PLAT  
KITTTITAS COUNTY  
CRITICAL AREAS REPORT**

**Prepared For:**

**Cle Elum Pines LLC  
PO Box 808  
Cle Elum, Washington 98922**

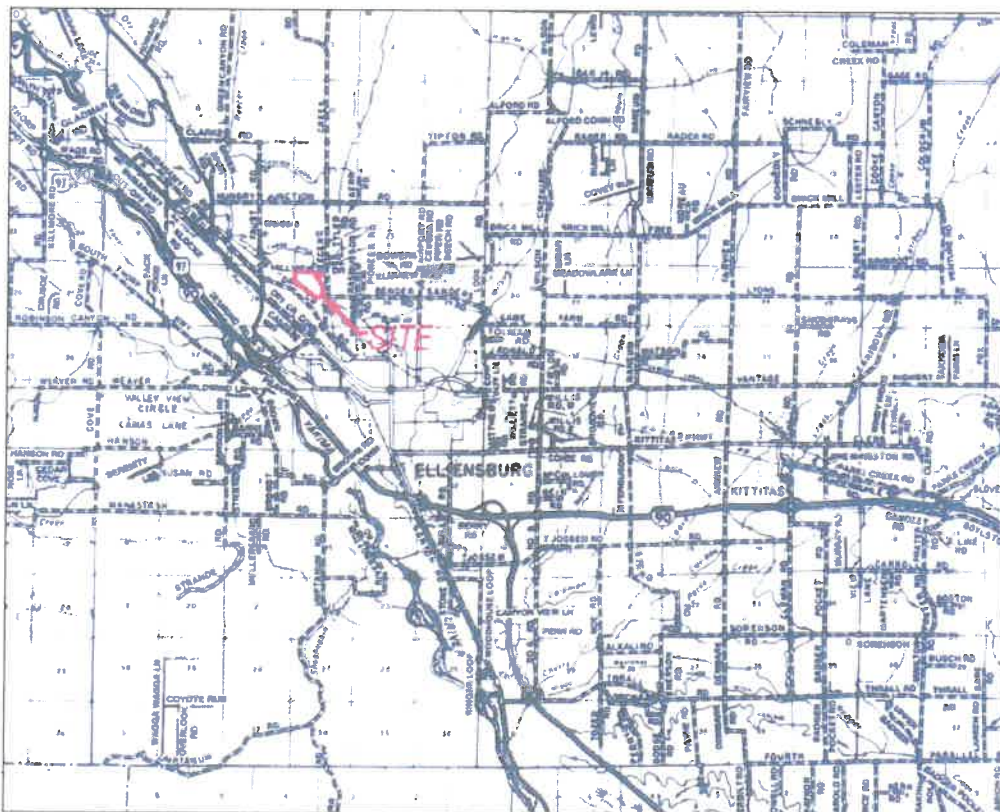
**September 24, 2008  
Job#A7-273**



**PALOMINO FIELDS PLAT  
KITKITAS COUNTY  
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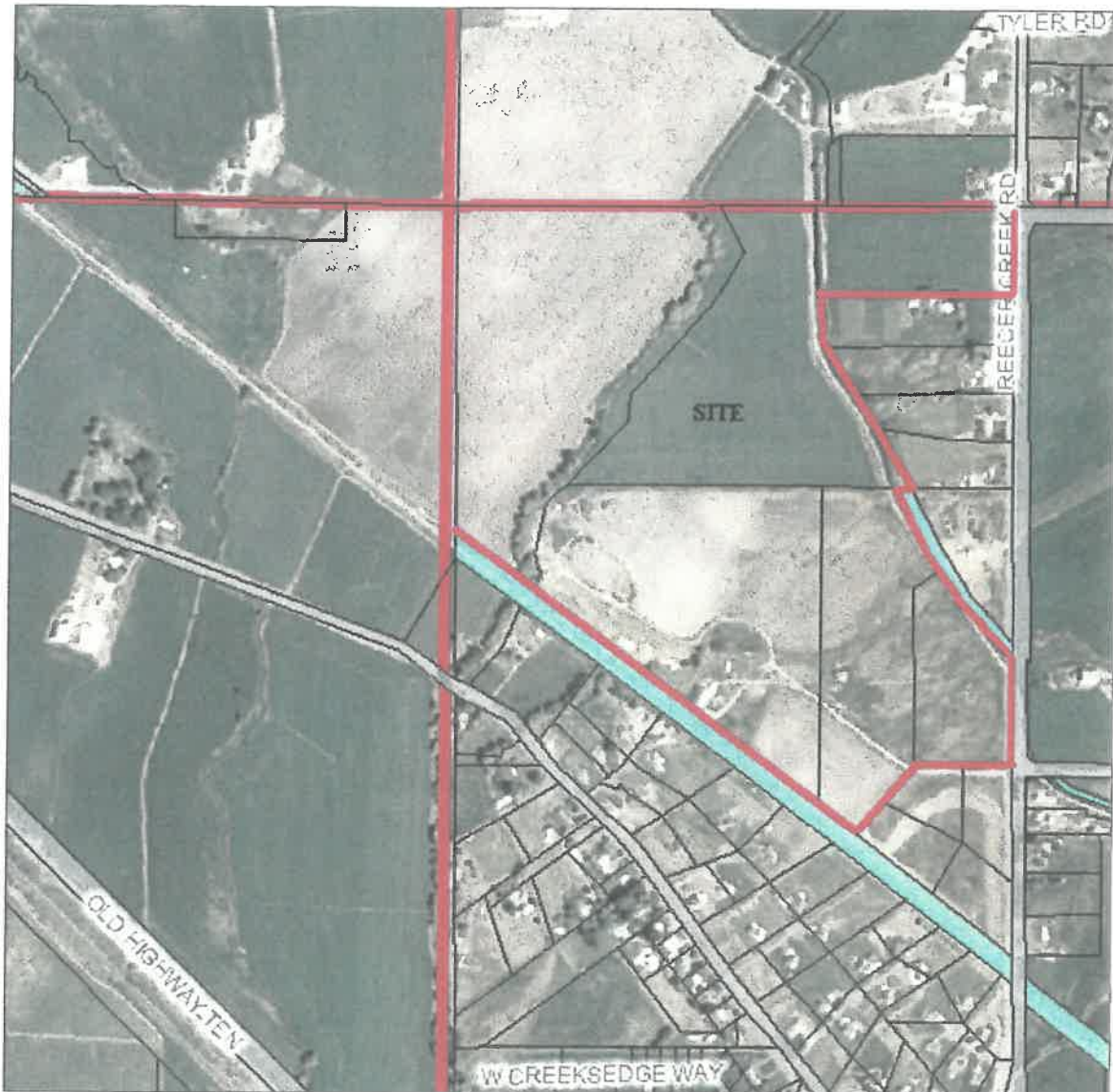
**1.0 INTRODUCTION**

This report describes our observations of jurisdictional wetlands, streams and buffers on or within 100' of the site (Tax Parcels #18-18-27020-0003, #18-18-27020-0002, #18-18-27020-0016, #18-18-27020-0001, #18-18-27020-0015, & #18-18-27020-0017) of the proposed Palomino Fields Plat, located north of the John Wayne Trail and west of Reecer Creek Road in unincorporated Kittitas County, Washington (the "site").



*Above: Vicinity Map of the site.*

Specifically, the site is a 120.8 acre, irregular shaped property located in a portion of the western ½ of Section 27, Township 18 North, Range 18 East of the W.M. in Kittitas County Washington. The site is bordered by the John Wayne Trail on the south, Reecer Creek Road on the east, the Town Canal on the northeast, and agricultural fields on the north and west. Currier Creek passes through the western side of the site.



*Above: Aerial photograph of the site.*

The site consists of a mix of irrigated timothy hay fields, fallow fields, several structures, gravel driveways, parking areas, a potable well, septic system, farm pond, an outdoor stage, and several fenced riding areas. Currier Creek splits the sites west side and the Town Ditch also crosses the northern end of the site.

The site is proposed to be developed into 120 single family lots with associated infrastructure.

## 2.0 METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site between April 1, 2007 and October 9, 2007 as well as on September 17, 2008. The site was reviewed using methodology described in the *Washington State Wetlands Identification Manual* (WADOE, March 1997). This is the methodology currently recognized by Kittitas County and the State of Washington for wetland determinations and delineations. The wetland areas identified would also be considered wetlands using the methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), as required by the US Army Corps of Engineers. Soil colors were identified using the 1990 Edited and Revised Edition of the *Munsell Soil Color Charts* (Kollmorgen Instruments Corp. 1990).

The *Washington State Wetlands Identification and Delineation Manual* and the *Corps of Engineers Wetlands Delineation Manual* both requires the use of the three-parameter approach in identifying and delineating wetlands. A wetland should support a predominance of hydrophytic vegetation, have hydric soils and display wetland hydrology. To be considered hydrophytic vegetation, over 50% of the dominant species in an area must have an indicator status of facultative (FAC), facultative wetland (FACW), or obligate wetland (OBL), according to the National List of Plant Species That Occur in Wetlands: Northwest (Region 9) (Reed, 1988). A hydric soil is "a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part". Anaerobic conditions are indicated in the field by soils with low chromas (2 or less), as determined by using the Munsell Soil Color Charts; iron oxide mottles; hydrogen sulfide odor and other indicators. Generally, wetland hydrology is defined by inundation or saturation to the surface for a consecutive period of 12.5% or greater of the growing season. Areas that contain indicators of wetland hydrology between 5%-12.5% of the growing season may or may not be wetlands depending upon other indicators. Field indicators include visual observation of soil inundation, saturation, oxidized rhizospheres, water marks on trees or other fixed objects, drift lines, etc. Under normal circumstances, indicators of all three parameters will be present in wetland areas.

Following delineations of wetlands on the site, the flags were surveyed and placed on the site plan by Encompass Engineering, Inc.

In order to monitor hydrology of the site, inspections of the site were conducted bi-weekly between April 1 and October 9 time period, as well as additional site visits in

September of 2008, which spans the growing season as well as correlates with the times of highest groundwater levels (October before irrigation ceases in the valley) in the growing season.

Off-site areas within 100' of the site (largest buffer used by Kittitas County) were inspected from the site visually for any obvious wetland features. It should be clear that this was all done visually from the site and we never entered or sampled any areas outside of the site limits.

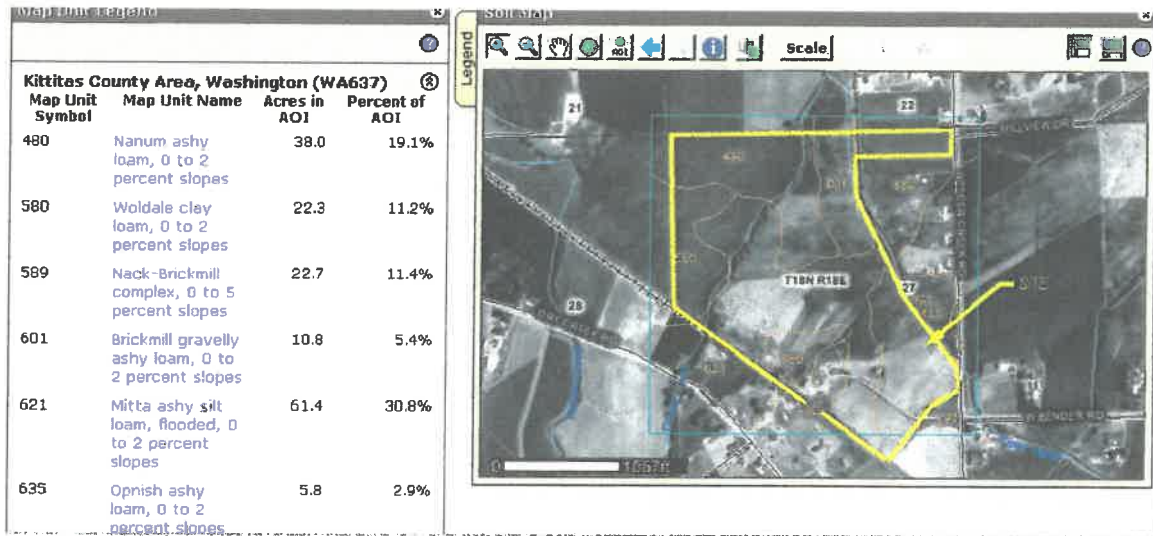
### **3.0 OBSERVATIONS**

#### **3.1 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, the Washington State Department of Natural Resources (WADNR) FPARS stream mapping website, the Kittitas County Mapsifter website with Wetland layers, and data on file at the Kittitas County NRCS office in regards to soil data for the site.

##### **3.1.1 Soil Survey**

According to data on file at the Kittitas County NRCS office, the site is mapped as containing six soil types; Nanum ashy loam (map unit #480), Woldale Clay (Map unit #580), Nack-Brickmill complex (Map unit #589), Brickmill gravelly ashy loam (Map unit #621), and Opnish ashy loam (Map unit #635). Below is a description of each of these soil types with a more detailed description at the end of the report. All of these soils have a thick mollic epipedon which is typical of steppes and grasslands. Typically Mollisols will be very dark which can be a confusing characteristic as dark soil colors are also typical of hydric or wetland soils. A detailed soil report specific to the site is included as an attachment to this report.



*Nanum Ashy Loam*

Nanum ashy loam is a somewhat poorly drained soil that is formed on alluvial fans on terraces and is influenced by the presence of volcanic ash. This soil is known to have a seasonal high water table elevation at -22” depth. Nanum soils are not considered to be hydric or wetland soils. Nanum soils are mapped on the northern end of the site.

*Woldale Clay*

Woldale clay soils are a somewhat poorly drained soul formed in alluvium. They are found in depressions and low lying areas on piedmont slopes from mountain slopes to valley floors. These soils are saturated at some time unless drained. Woldale soils are considered wetland or hydric soils.

*Mitta ashy silt loam*

Mitta soils are moderately well drained soils formed in alluvium mixed with volcanic ash. Typically Mitta soils have an irrigation induced water table at a depth of -30”-60” through the growing season. Mitta are not considered to be hydric or wetland soils.

*Opnish ashy loam*

Opnish soils are moderately well drained soils formed in alluvium with some volcanic ash in the surface horizons. An irrigation induced water table sometimes occurs near the surface during the growing season. Opnish soils are not considered to be hydric or wetland soils.

*Nack ashy loam*

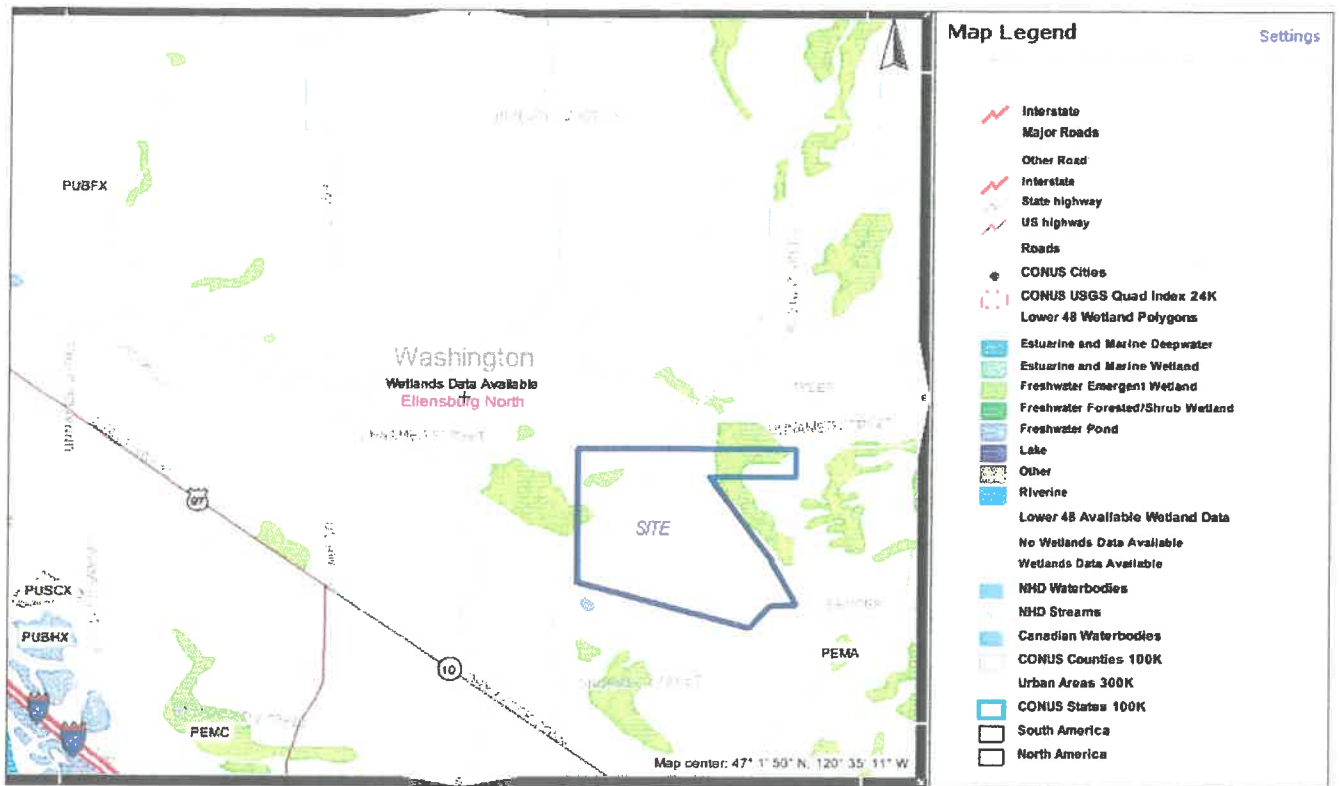
Nack ashy loam soils are somewhat poorly drained soils formed over flood deposits with an influence of volcanic ash. The irrigation induced water table is below the elevation required to be a hydric soil. Nack soils are not considered to be hydric or wetland soils.

*Brickmill gravelly ashy loam*

Brickmill soils are moderately well drained soils formed over old alluvium with an ash component. Brickmill soils have an irrigation induced water table at a depth of -30”-60” through the growing season. Brickmill soils are not considered to be hydric or wetland soils.

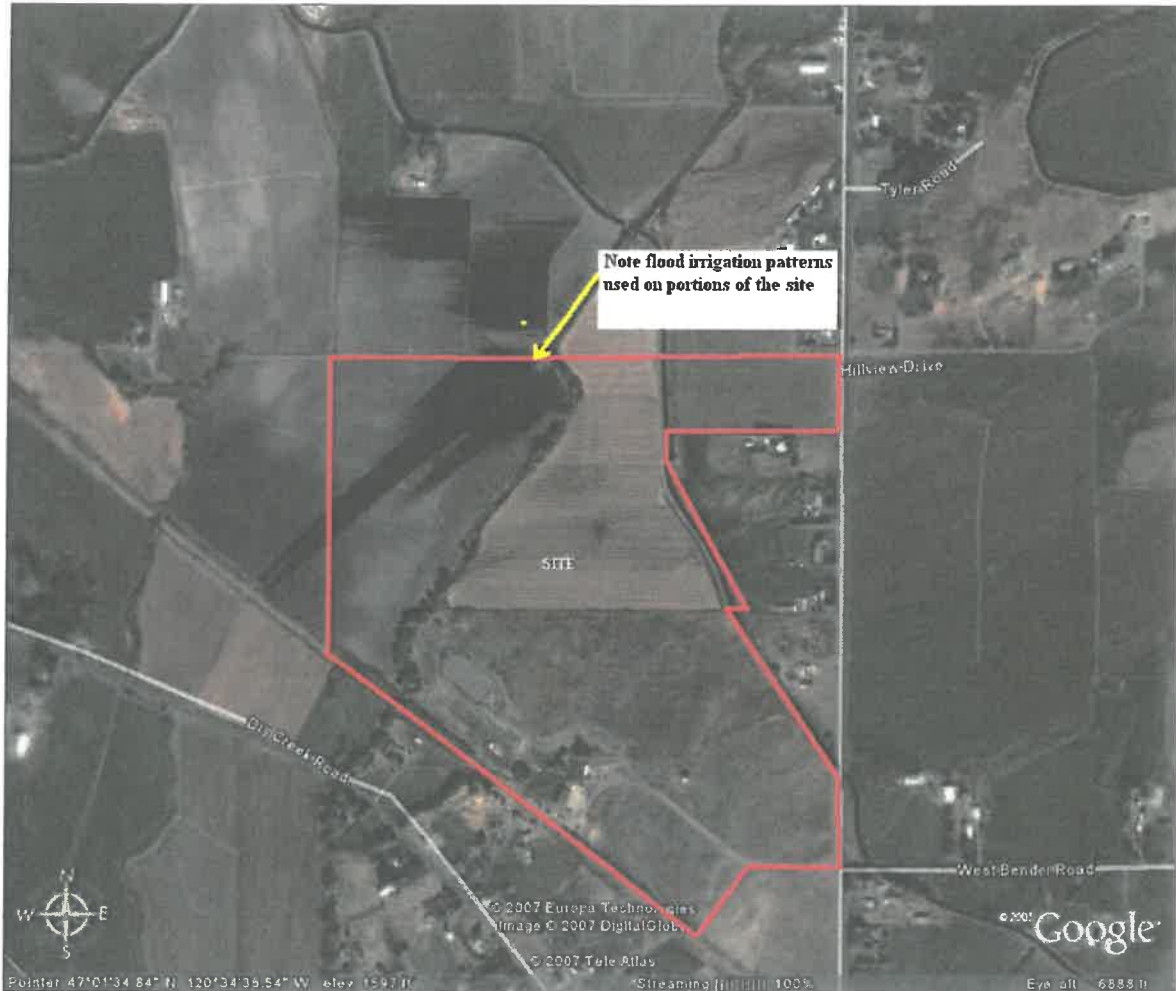
**3.1.2 National Wetlands Inventory (NWI)**

According to the NWI map for the site, there are wetlands along the east side of the Town Ditch along the northeastern parcel of the project. Additionally, there are wetlands shown in the irrigated fields west of Currier Creek. It should be noted this inventory of the site was done exclusively by aerial photograph interpretation and did not include a field verification of the wetlands mapped.



Above: National Wetlands Inventory Map of the site.

The areas identified as wetlands on the NWI map on the west side of Currier Creek clearly match up with current and past flood irrigation practices and begin at the upper elevation of flood irrigation as can be clearly seen in the following photograph.

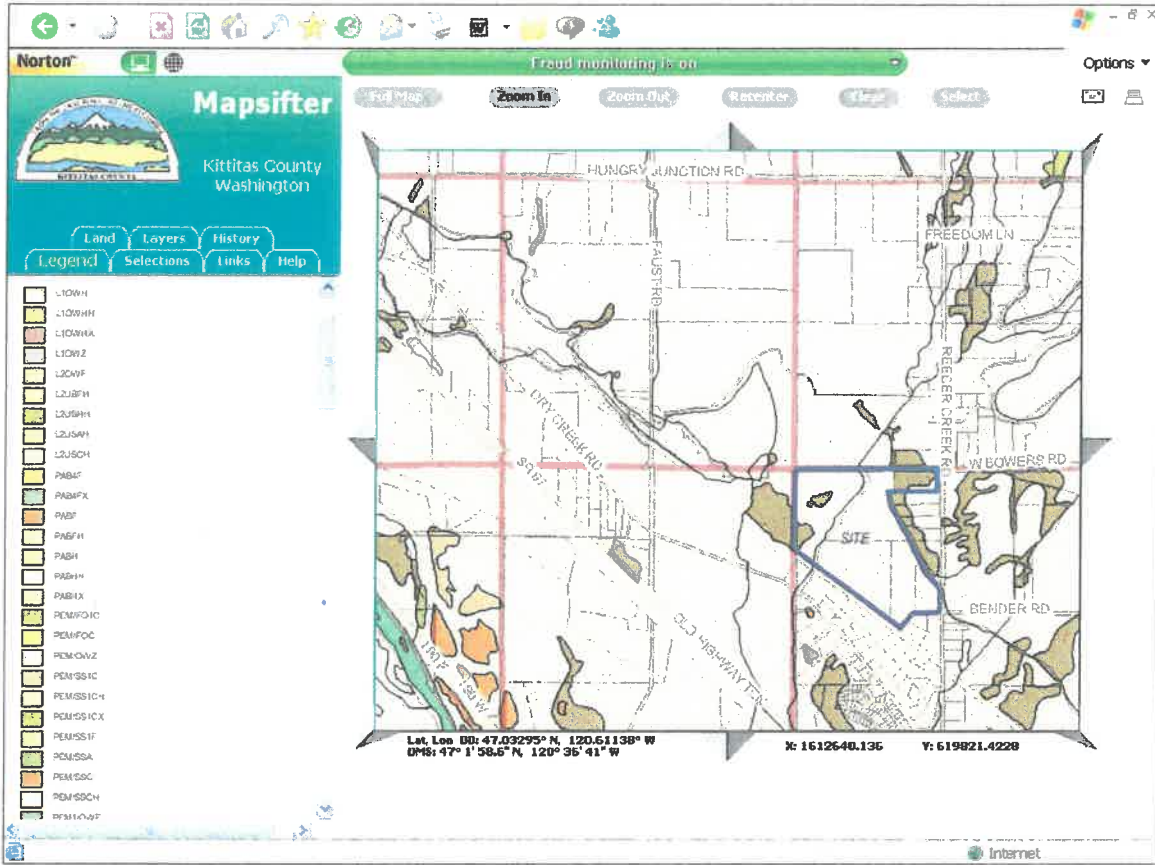


*Above: Aerial photograph of the site during flood irrigation. As can be seen in the western timothy fields, flood irrigation patterns include the areas shown as wetland in the NWI and Kittitas County inventories.*



### 3.1.3 Kittitas County Mapsifter – Wetland Layer

The Kittitas County Mapsifter website depicts wetland coinciding with the NWI map and is in fact just a carryover from that mapping.



*Above: Kittitas County wetland mapping of the site.*

### 3.1.4 WADNR FPARS website

According to the WADNR FPARS website with stream types layers activated, the site has a Type F stream crossing the center of the site which coincides with the location of Carrier Creek.



Above: WADNR FPASR map depicting "waters" on the site.

### 3.2 Field observations

#### 3.2.1 Uplands

As previously described, the site is comprised of irrigated timothy fields on the north and west side of the site abutting Currier Creek. The northeastern 8 acre parcel is a fallow field that has not been irrigated over the last year. The southern portion of the site, south of the Town Canal and east of Currier Creek consists of the former Cowboy Church site with the various structures and infrastructure previously described.

The Town Ditch provides irrigation water to the site. The northern and western timothy fields were irrigated through flood irrigation over this past season. Water is directed to the site through various turnouts, ditches and pipes. The eastern irrigated field is irrigated from the east edge near the Town Ditch with irrigation water flooding to the west towards Currier Creek. Water generally has been absorbed before getting to Currier Creek so there is no tailwater ditch in this area. A small irrigation ditch separates the Cowboy Church site from this irrigated field.

The irrigated fields on the west side of Currier Creek are irrigated through water pumped out to the fields from a turnout located along the west side of Currier Creek. A pipe is laid across the fields north edge and through the center with irrigation water dispersed from these pipes with a southwesterly flooding direction.

All of the irrigated fields were found to be vegetated nearly 100% with timothy (*Phleum pretense*). Soil pits excavated throughout these fields revealed clay loam soils with soil colors ranging from 10YR2/2-10YR2/1. Although portions of the irrigated fields contain hydric characteristics and facultative vegetation (timothy – FAC), there was no evidence of wetland hydrology in any of these fields during the growing season (April-October) monitoring. Irrigation was conducted in the timothy fields through this growing season. During this irrigation period, soil saturation was observed in the upper 4"-6" layer and as soon as irrigation water was shut off, the soil profile was found to dry up to a non-saturated condition in the upper 16". None of this area was found to have any continuous soil saturation for the period required to qualify as wetland. Late season (September-October) observations of this portion of the site revealed that the soils groundwater level was >-24" deep throughout this area.



*Above: Photograph of the existing farm pond as viewed from the east.*



*Above: A view of the irrigation ditch that directs water from the Town ditch to the farm pond on the site.*

Wetland areas depicted on the NWI and Kittitas County maps are only indicative of short term areas of irrigation flooding and directly correspond to the location and direction of flood irrigation of the site. It is clear that the aerial photograph utilized for these inventories was taken during a period of time when water was being released into the fields and was not indicative of a long term saturation event or natural wetland conditions.

The Cowboy Church site consists of the area surrounding the church structures as well as abandoned/fallow agricultural fields on the north and eastern portions of this area. An existing irrigation ditch feeds the farm pond with water from the Town Ditch. Water within this pond exits via a controlled weir and runs in a ditch approximately 100' to a culvert where it drains to the south towards the John Wayne Trail where it enters a small wetland (Wetland B). Soil pits excavated throughout most of this area of fallow fields surrounding the church structures and east of Currier Creek revealed a dry, cobbly clay loam with dark soil colors (10YR 2/2). No portions of the Cowboy church site nor any outside the delineated wetlands on the site revealed wetland hydrology throughout our monitoring period.

### 3.2.2 Wetlands & Streams

#### Wetland A

On the south end of the site east of the Cowboy Church structures there is a small depression that appears to be an old excavation. This area is vegetated with a mix of cattail (*Typha latifolia*), field mint (*Mentha arvensis*), and Canadian thistle (*Cirsium arvense*). This area was delineated with blue wire flags labeled A1-A13.

Soil pits excavated within this wetland revealed a cobbly loam with a soil color of 10YR 2/1. No evidence of wetland hydrology was present until the last week of September when groundwater levels in the south end of this portion of the site in this area rose to within -12" of the surface. Saturated soils were found within -8" of the surface in this area. The wetland drains southerly into an old ditched area along the John Wayne Trail, and is vegetated with cattail, sedge (*Carex* spp.) and a small patch of coyote willow (*Salix exigua*). The ditch area had approximately 1" of standing water in late September 2007, and saturated within 6" of the surface in September of 2008. Other than these observations it has been found to be dry the rest of the study period.

Using the US Fish and Wildlife Wetland Classification Method (Cowardin et al. 1979), Wetland A would be classified as PEM1E (palustrine, emergent, persistent, saturated).

Kittitas County utilizes the old Washington Department of Ecology Wetland Ratings System from 1991. Using this system, Wetlands A meets the criteria of Category 4

wetlands due to the fact it is over 90% dominated by cattail which is on the native Category 4 wetland list as designated on Page 18 of the WADOE manual. According to Chapter 17.04.020 of the Kittitas County Code, Category 4 wetlands less than 1 acre in size have no buffer.

*According to 17.04.040, Up to two acres of Class IV wetlands may be filled, drained or modified with no approval required from the planning manager. If more than two acres of Class IV wetlands are filled, drained or modified, approval of the planning manager is required. Such development activity shall provide mitigation in accordance with Section 17A.04.050 for that portion of the wetland fill or modification that exceeds two acres. Category IV wetlands may be used for secondary stormwater management facilities having no reasonable alternative on-site location, provided there is no significant adverse impact to the functions and values of those wetlands. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).*



*Above: Wetland A as viewed looking westerly.*



*A view of Wetland A as viewed from the east looking southerly towards the John Wayne Trail just beyond the small willow clump.*

Wetland A (as well as all other wetlands on the site) was also rated using the 2007 revised WADOE 2004 Wetland rating System for Eastern Washington to determine functions. This is the current system used by WADOE for establishing function ratings for wetlands. However, there is no requirement for this project to provide these ratings as Kittitas County has not adopted this system to date. We are providing these ratings as they reflect a better analysis of wetland function than the old system. Additionally, as WADOE may review this project as an expert reviewer for the County, we are providing these ratings for each wetland for WADOE's convenience in reviewing these wetlands. Using this system Wetland A rated as a Category 4 wetland with a total of 21 points. All functions scored low including Water quality at 9 points, hydrologic function at 4 points, and habitat function at 8 points.

#### ***Wetland B***

As previously described, the farm pond overflow discharges into a pipe that drains into a small wetland located on the south end of the site and extends south under a small bridge on the John Wayne Trail off-site. This area was flagged with flags B1-B7 and is

comprised of an emergent plant community. This wetland is dominated by a mix of creeping buttercup (*Ranunculus repens*) and reed canary grass (*Phalaris arundinacea*).



*Above: Wetland B looking south towards the John Wayne Trail.*

Soil pits excavated within this wetland revealed a cobbly loam with a soil color of 10YR 2/1. As was observed with Wetland A, no evidence of wetland hydrology was present until the last week of September when groundwater levels in the south end of this portion of the site in this area rose to within -12" of the surface. Saturated soils were found within -8" of the surface in this area.

Using the US Fish and Wildlife Wetland Classification Method (Cowardin et al. 1979), Wetland B would be classified as PEM1E (palustrine, emergent, persistent, saturated).

Wetlands B meets the criteria of a Category 4 wetlands due to the fact it is over 90% dominated by species from the invasive/exotic plant list on Page 19 of the WADOE manual. According to Chapter 17.04.020 of the Kittitas County Code, Category 4 wetlands less than 1 acre in size have no buffer.



According to 17.04.040, *Up to two acres of Class IV wetlands may be filled, drained or modified with no approval required from the planning manager. If more than two acres of Class IV wetlands are filled, drained or modified, approval of the planning manager is required. Such development activity shall provide mitigation in accordance with Section 17A.04.050 for that portion of the wetland fill or modification that exceeds two acres. Category IV wetlands may be used for secondary stormwater management facilities having no reasonable alternative on-site location, provided there is no significant adverse impact to the functions and values of those wetlands. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).*

Wetland B was also rated using the revised WADOE 2004 Wetland rating System for Eastern Washington to determine functions. Using this system Wetland B rated as a Category 4 wetland with a total of 20 points. All functions scored low including Water quality at 9 points, hydrologic function at 4 points, and habitat function at 7 points.

### ***Wetland C***

A deeply excavated old ditched area along the north edge of the John Wayne Trail and east of Currier Creek contains wetland characteristics and was delineated as Wetland C with pink wetland delineation flagging labeled C1-C7. This wetland is a steeply sided depression vegetated with pacific willow and some reed canary grass. This depression is isolated from Currier Creek by approximately 50' of upland area and does not appear to have any surface hydrologic connection.

Soil pits excavated within this wetland revealed a sandy loam with a soil color of 10YR 2/1. As with Wetlands A & B, no evidence of wetland hydrology was present until the last week of September since review began. At this time groundwater levels in the south end of this portion of the site in this area rose to within -12" of the surface. Saturated soils were found within -8" of the surface in this area.

Using the US Fish and Wildlife Wetland Classification Method (Cowardin et al. 1979), Wetland C would be classified as PSS1E (palustrine, scrub-shrub, broad leaved deciduous, saturated).

Wetlands C meets the criteria of Category 3 wetlands due to small size and total score of 12 it received using the WADOE Wetland Ratings form for eastern Washington. According to Chapter 17.04.020 of the Kittitas County Code, only Category 3 wetlands over 10,000sf in size have a buffer. Therefore, although the wetland is protected, no buffer is required by the County.



*Above Wetland C looking southwest. Tree-line on right side of photograph is riparian area along Currier creek. Power line runs over the top of the John Wayne Trail behind wetland.*

Wetland C was also rated using the revised WADOE 2004 Wetland rating System for Eastern Washington to determine functions. Using this system Wetland C rated as a Category 3 wetland with a total of 35 points. All functions scored low-moderate including Water quality at 11 points, hydrologic function at 12 points, and habitat function at 12 points. The close proximity to Currier Creek and its apparent depth of ponding were the primary reasons this wetland rated a Category 3 verses a category 4 wetland.

#### ***Wetland D***

Wetland D is a narrow band of emergent wetland (fallow timothy field) located east of the Town Ditch along the northeast corner of the site. This wetland corresponds to a portion of the northeasterly wetland depicted on the NWI and Kittitas County inventory maps. This wetland was delineated with blue wire flags D1-D8.

This wetland is vegetated with a mix of pasture species including timothy, bluegrass (*Poa* spp.), reed canary grass, and bentgrass.



*Above: Wetland D looking south in late September 2008. Soils were saturated at a depth of -10 inches at this time.*

Soil pits excavated within this wetland revealed a cobbly loam with a soil color of 10YR 2/1. As with other wetlands on the site, no evidence of wetland hydrology was present in this area throughout the growing season until September since review began. At this time groundwater levels reached their highest in this portion of the valley. Saturated soils were found within -10" of the surface in this area in late September of 2007 and 2008.

Using the US Fish and Wildlife Wetland Classification Method (Cowardin et al. 1979), Wetland D would be classified as PEM1E (palustrine, emergent, persistent, saturated).

Wetlands D meets the criteria of Category 4 wetlands due to the fact it is over 90% dominated by species from the invasive/exotic plant list on Page 19 of the WADOE manual. According to Chapter 17.04.020 of the Kittitas County Code, Category 4 wetlands under 1 acre in size have no buffer.

*According to 17.04.040, Up to two acres of Class IV wetlands may be filled, drained or modified with no approval required from the planning manager. If more than two acres of Class IV wetlands are filled, drained or modified, approval of the planning manager is required. Such development activity shall provide mitigation in accordance with Section 17A.04.050 for that portion of the wetland fill or modification that exceeds two acres. Category IV wetlands may be used for secondary stormwater management facilities having no reasonable alternative on-site location, provided there is no significant adverse impact to the functions and values of those wetlands. (Ord. 95-15 (part), 1995; Ord. 94-22 (part), 1994).*

Wetland D was also rated using the revised WADOE 2004 Wetland rating System for Eastern Washington to determine functions. Using this system Wetland D rated as a Category 3 wetland with a total of 32 points. Water quality function was found to be high due to its hydrologic isolation, ungrazed vegetation, and close proximity of tilled fields to the wetland which adds a multiplier to the overall score. Hydrologic and habitat functions scored low with hydrologic function at 8 points, and habitat function at 4 points.

### ***Currier Creek***

Currier Creek passes through the western portion of the site flowing in a southerly direction. Numerous irrigation features are located within the channel, some forming partial fish barriers and some just abandoned without causing any blockage. In general Currier Creek is located within a well defined, semi-ditched alignment through the site. The creek bed sits approximately 6'-10' below the elevation of the site. Berms and piles of old agricultural debris including concrete, cobble piles and logs are found along the top of the banks.

Vegetation along the channel includes a very narrow band of forested buffer comprised of cottonwoods, pacific willow, coyote willow, red-osier dogwood, hawthorne, and snowberry. A dense strata of reed canary grass covers the banks of the creek where the banks are more gently sloped. Much of the creek has a near vertical bank.

Currier Creek is known to contain rainbow trout as well as brook trout, cutthroat trout, western lamprey, torrent sculpin, suckers (largescale, bridgelip, and mountain), dace (longnose and speckled), northern squawfish, three-spine stickleback, redbelly shiner, and mountain whitefish.

Federally threatened bull trout are not likely to be present within the Currier Creek watershed, but are listed in the Yakima River Basin and the mainstem Yakima River is designated as critical habitat. Federally threatened Middle Columbia River Steelhead are also listed in the Yakima Basin. Multiple fish passage barriers in the Recer Creek and

Currier Creek Watersheds have prevented Currier Creek from being designated critical habitat for steelhead. Due to their athletic nature and that during high flows, many barriers become passable, it will be assumed that steelhead may be present within Currier Creek. Conservation measures are planned and will be applied under this assumption. Essential Fish Habitat for coho and Chinook salmon will also be protected using these same conservation measures.

According to Kittitas County Code Chapter 17.02.300,

"Type 3 waters" means segments of natural waters which are not classified as Type 1 or 2 and have a moderate to slight fish, wildlife, or human use.

Currier Creek appears to best meet the criteria of a Type 3 water as it currently has moderate fish use.

According to Chapter 17.07.010 buffers of Type 3 waters are as follows;

Type 3 waters 20- 50 feet from OHWM.

#### **4.0 Wildlife and Threatened and Endangered Species**

##### **4.1 WDFW Priority Habitat Data**

A review of the WDFW Priority Habitat Maps and associated species specific reports for the area of the site revealed only Currier Creek and the previously inventoried wetlands as "priority habitat". The site is actually identified with a Form #90000 which "*indicates presence of PHS is unknown or the area was not mapped*". PHS refers to "*priority habitats and species*".

Currier Creek is identified as containing priority resident fish (rainbow trout) fish as well as priority anadromous fish. As previously mentioned, the wetlands identified on the NWI map have been transferred to the PHS map as priority habitats. WDFW does not allow us to reproduce these maps in this report.

Several osprey nests are identified approximately ½ mile to the southwest of the site in the vicinity of the Ellensburg Concrete Products gravel pits.

##### **4.2 Washington Department of Natural Resources Natural Heritage Program**

A search was conducted of the WADNR Natural Heritage Information System for any significant features on the site. The WADNR Natural Heritage program records any known observations or known locations of rare plants and high quality ecosystems. The

results of the data search of this information revealed no known or recorded rare plants or high quality ecosystems on the site.

#### 4.3 Field Observations

During our site investigation we observed some of the more common wildlife and/or signs of wildlife utilizing the site. Species observed on the site included coyote, California quail, coyote, red tailed hawk, kestrel, magpie, European starling, skunk, and raccoon. The agricultural character of the site as well as the surrounding area have limited the available habitat to primarily that around Currier Creek and some of the shrub strips bordering ditches and the John Wayne Trail. No rare, threatened or endangered species were observed on the site.



*Above: Coyote observed hunting rodents on northern end of site in timothy field.*

#### 5.0 REGULATIONS

In addition to the wetland regulations previously described for wetlands, certain activities (filling and dredging) within "waters of the United States" may fall under the jurisdiction of the U.S. Army Corps of Engineers (USACOE). The USACOE regulates all discharges

into "waters of the United States" (wetlands) under Section 404(b) of the Clean Water Act. Wetlands that are hydrologically isolated are not regulated by the USACOE, per the SWANCC and as interpreted by the Corps and EPA in their Regulatory Guidance Letter.

Discharges (fills) into any wetlands that are not considered "isolated" are regulated by the Corps. However, only the Corps can make that determination.

## 6.0 PROPOSED PROJECT

The proposed project is the construction of a 120 lots plat with associated infrastructure. No impacts to the wetlands are proposed. The wetlands will remain on some of the proposed lots and all building and grading will occur outside their limits. Signage will be placed at the edge of the wetlands to indicate their presence to future land owners.

Currier Creek will be protected as well as a 100' buffer area measured from the Ordinary high water mark. As part of this development, a rehabilitation project of Currier Creek is being developed to improve fish habitat through the site.

Two crossings of the creek are proposed at the extension of Bowers Road and the proposed Road F. These crossings will be designed and coordinated with Washington State Department of Fish and Wildlife through the Hydraulic Project Approval process. These crossings will be designed with bridges or bottomless culverts as is typically required by WDFW.

Additionally, the extension of Bowers Road across the site's northeast corner will require impacting a small amount (370sf) of the north end of Wetland D. This is a Category 4 wetland that is located in a fallow timothy field. According to 17.04.040, *Up to two acres of Class IV wetlands may be filled, drained or modified with no approval required from the planning manager.* As a result, no mitigation is required for this minor road construction impact.

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](mailto:esewall@sewallwc.com).

Sincerely,  
Sewall Wetland Consulting, Inc.



Ed Sewall  
Senior Wetlands Ecologist



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USDA NRCS Soil Mapper Website

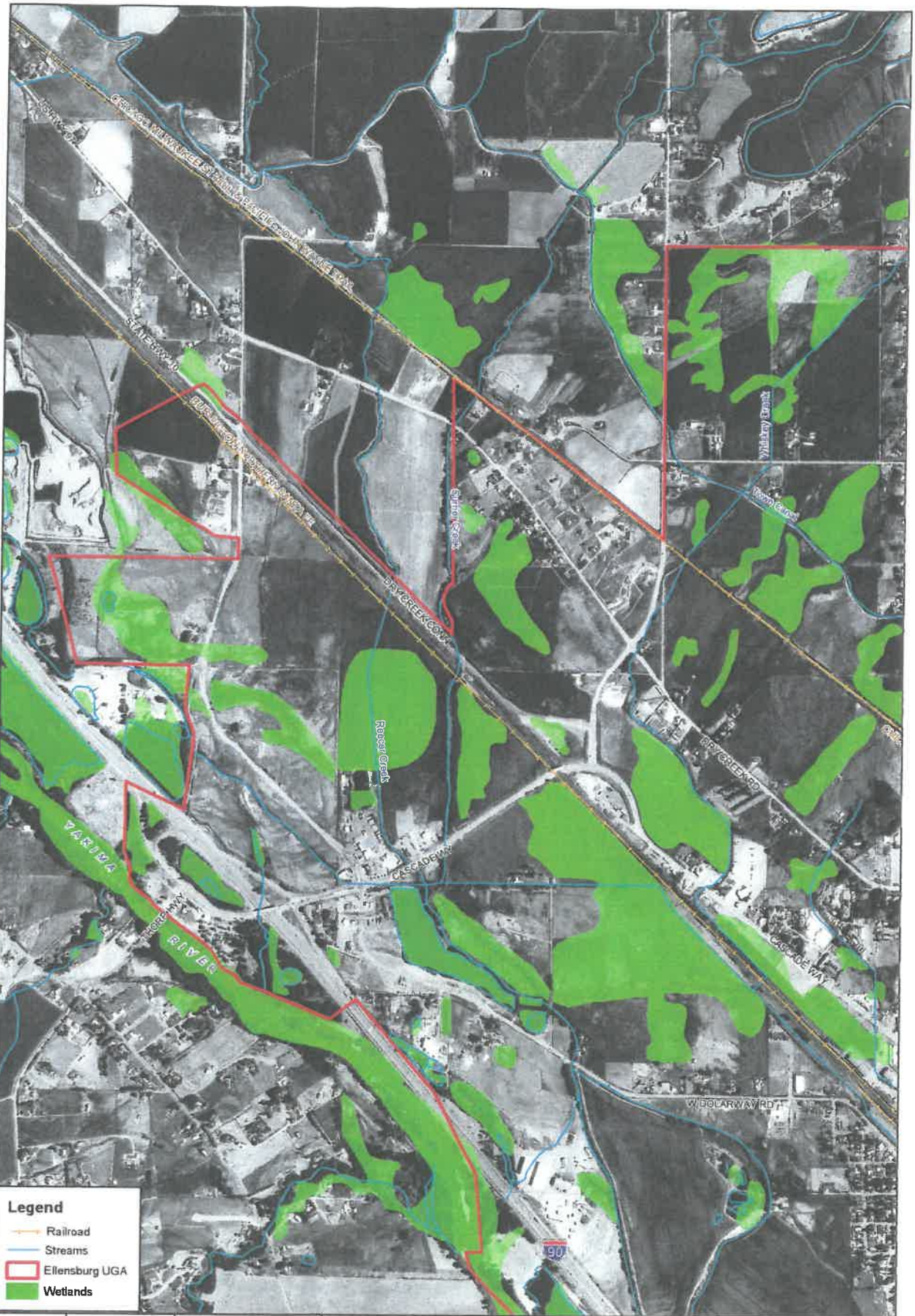
Kittitas County Code, Title 17A Critical Areas

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1

Washington Department of Ecology – Washington State Wetland Rating System for Eastern Washington. October 1991 Pub#91-58

Washington Department of Ecology – Washington State Wetland Rating System for Eastern Washington Revised March 2007. Pub #04-06-15





**Legend**

-  Railroad
-  Streams
-  Ellensburg UGA
-  Wetlands

File name: Fig2\_Sheet 1.pdf  
 Created/edited by: DNE  
 Data last updated: 05/14/05

Map data is the property of the sources listed below. Inaccuracies may occur, and Adolphson Associates, Inc. implies no warranties or guarantees regarding any aspect of data depiction.  
 SOURCE: Kittitas County GIS, 2005; USFWS, 1987; Adolphson, 2005

Scale: 1" = 1,100 Feet  
 1 inch equals 1,100 feet

**FIGURE 2 (Sheet 1)**  
**ELLENSBURG UGA WETLAND INVENTORY**  
 ELLENSBURG CRITICAL AREA UPDATE  
 ELLENSBURG, WASHINGTON



United States  
Department of  
Agriculture



NRCS

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Kittitas County Area, Washington

Sewall Wetland Consulting-  
Palomino Fields



00231

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

## Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

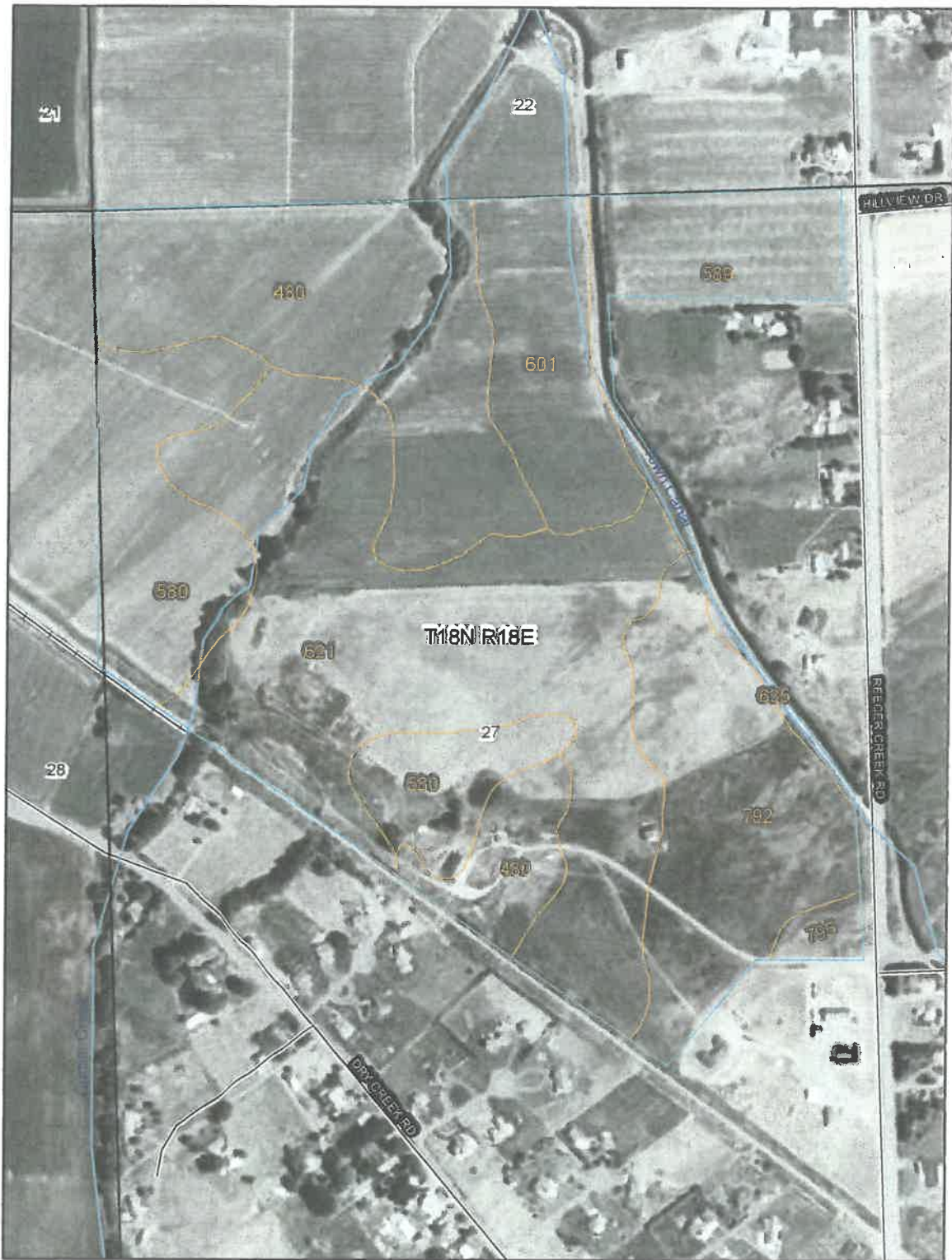
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report  
Soil Map (Palomino Fields Plat)





Custom Soil Resource Report  
Legend (Palomino Fields Plat)

**MAP LEGEND**

**MAP INFORMATION**

- Area of Interest (AOI)
- Soils
- Soil Map Units
- Special Point Features**
  - Blowout
  - Borrow Pit
  - Clay Spot
  - Closed Depression
  - Gravel Pit
  - Gravelly Spot
  - Landfill
  - Lava Flow
  - Marsh
  - Mine or Quarry
  - Miscellaneous Water
  - Perennial Water
  - Rock Outcrop
  - Saline Spot
  - Sandy Spot
  - Severely Eroded Spot
  - Sinkhole
  - Slide or Slip
  - Sodic Spot
  - Spoil Area
  - Stony Spot

- Very Stony Spot
- Wet Spot
- Other
- Special Line Features**
  - Gully
  - Short Steep Slope
  - Other
- Political Features**
  - Township and Range
  - Section
- Public Land Survey**
  - Township and Range
  - Section
- Municipalities**
  - Cities
  - Urban Areas
- Water Features**
  - Oceans
  - Streams and Canals
- Transportation**
  - Rails
  - Roads**
    - Interstate Highways
    - US Routes
    - State Highways
    - Local Roads
    - Other Roads

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: UTM Zone 10N

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

Soil Survey Area: Kittitas County Area, Washington  
Survey Area Data: Version 2, Feb 29, 2008

Date(s) aerial images were photographed: 6/15/2000

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

## Map Unit Legend (Palomino Fields Plat)

Kittitas County Area, Washington (WA637)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
480	Nanum ashy loam, 0 to 2 percent slopes	27.1	22.4%
580	Woldale clay loam, 0 to 2 percent slopes	16.5	13.7%
589	Nack-Brickmill complex, 0 to 5 percent slopes	8.4	6.9%
601	Brickmill gravelly ashy loam, 0 to 2 percent slopes	9.6	8.0%
621	Mitta ashy silt loam, flooded, 0 to 2 percent slopes	39.9	33.0%
635	Opnish ashy loam, 0 to 2 percent slopes	0.7	0.6%
792	Brickmill gravelly ashy loam, 0 to 5 percent slopes	17.4	14.4%
795	Nack-Opnish complex, 0 to 2 percent slopes	1.3	1.1%
Totals for Area of Interest (AOI)		120.9	100.0%

## Map Unit Descriptions (Palomino Fields Plat)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different

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management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

**Kittitas County Area, Washington Version date:2/29/2008  
10:07:15 AM**

**480—Nanum ashy loam, 0 to 2 percent slopes**

**Map Unit Setting**

*Elevation:* 1,400 to 2,500 feet  
*Mean annual precipitation:* 9 to 12 inches  
*Mean annual air temperature:* 48 to 50 degrees F  
*Frost-free period:* 130 to 150 days

**Map Unit Composition**

*Nanum and similar soils:* 85 percent

**Description of Nanum**

**Setting**

*Landform:* Terraces, alluvial fans  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Concave, linear  
*Parent material:* Alluvium with an influence of volcanic ash in the upper part

**Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 20 to 40 inches to strongly contrasting textural stratification  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* About 21 to 28 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 percent  
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 2.0  
*Available water capacity:* Low (about 5.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3w  
*Land capability (nonirrigated):* 3w

**Typical profile**

*0 to 8 inches:* Ashy loam  
*8 to 15 inches:* Ashy loam  
*15 to 28 inches:* Ashy clay loam  
*28 to 35 inches:* Very gravelly clay loam  
*35 to 60 inches:* Extremely gravelly sandy clay loam

**580—Woldale clay loam, 0 to 2 percent slopes**

**Map Unit Setting**

*Elevation:* 1,500 to 2,300 feet  
*Mean annual precipitation:* 9 to 12 inches

## Custom Soil Resource Report

*Mean annual air temperature:* 48 to 50 degrees F  
*Frost-free period:* 130 to 150 days

### Map Unit Composition

*Woldale and similar soils:* 85 percent

### Description of Woldale

#### Setting

*Landform:* Fan skirts, fan aprons  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear, concave  
*Parent material:* Alluvium

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 26 to 43 inches to strongly contrasting textural stratification  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 16 to 31 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 2.0  
*Available water capacity:* Low (about 4.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 3w  
*Land capability (nonirrigated):* 3w  
*Ecological site:* SEMIWET MEADOW 9-15 PZ (R008XY602WA)

#### Typical profile

*0 to 5 inches:* Clay loam  
*5 to 31 inches:* Clay  
*31 to 43 inches:* Very gravelly clay  
*43 to 60 inches:* Extremely cobbly clay loam

## 589—Nack-Brickmill complex, 0 to 5 percent slopes

### Map Unit Setting

*Elevation:* 1,400 to 2,500 feet  
*Mean annual precipitation:* 9 to 12 inches  
*Mean annual air temperature:* 48 to 50 degrees F  
*Frost-free period:* 130 to 150 days

### Map Unit Composition

*Nack and similar soils:* 60 percent  
*Brickmill and similar soils:* 30 percent

### Description of Nack

#### Setting

*Landform:* Alluvial fans  
*Down-slope shape:* Linear

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*Across-slope shape:* Linear

*Parent material:* Alluvium with a mantle of volcanic ash

### Properties and qualities

*Slope:* 0 to 5 percent

*Depth to restrictive feature:* 12 to 20 inches to strongly contrasting textural stratification

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)

*Depth to water table:* About 15 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 15 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 5.0

*Available water capacity:* Very low (about 2.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* 4w

*Land capability (nonirrigated):* 4w

### Typical profile

*0 to 6 inches:* Gravelly ashy loam

*6 to 15 inches:* Clay loam

*15 to 60 inches:* Extremely gravelly sandy clay

## Description of Brickmill

### Setting

*Landform:* Alluvial fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium with an influence of volcanic ash in the surface

### Properties and qualities

*Slope:* 0 to 5 percent

*Depth to restrictive feature:* 40 to 60 inches to strongly contrasting textural stratification

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)

*Depth to water table:* About 28 to 38 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 1.0

*Available water capacity:* Low (about 4.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3w

*Land capability (nonirrigated):* 3w

### Typical profile

*0 to 12 inches:* Gravelly ashy loam

*12 to 28 inches:* Very gravelly ashy sandy loam

*28 to 38 inches:* Extremely gravelly sandy loam

## Custom Soil Resource Report

*38 to 49 inches:* Extremely gravelly sandy loam  
*49 to 60 inches:* Extremely gravelly loamy coarse sand

### 601—Brickmill gravelly ashy loam, 0 to 2 percent slopes

#### Map Unit Setting

*Elevation:* 1,400 to 2,200 feet  
*Mean annual precipitation:* 9 to 12 inches  
*Mean annual air temperature:* 48 to 50 degrees F  
*Frost-free period:* 130 to 150 days

#### Map Unit Composition

*Brickmill and similar soils:* 85 percent

#### Description of Brickmill

##### Setting

*Landform:* Alluvial fans  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium with an influence of volcanic ash in the surface

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 40 to 60 inches to strongly contrasting textural stratification  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)  
*Depth to water table:* About 28 to 38 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water capacity:* Low (about 4.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 3w  
*Land capability (nonirrigated):* 3w

##### Typical profile

*0 to 12 inches:* Gravelly ashy loam  
*12 to 28 inches:* Very gravelly ashy sandy loam  
*28 to 38 inches:* Extremely gravelly sandy loam  
*38 to 49 inches:* Extremely gravelly sandy loam  
*49 to 60 inches:* Extremely gravelly loamy coarse sand

### 621—Mitta ashy silt loam, flooded, 0 to 2 percent slopes

#### Map Unit Setting

*Elevation:* 1,500 to 2,300 feet  
*Mean annual precipitation:* 9 to 12 inches  
*Mean annual air temperature:* 48 to 50 degrees F  
*Frost-free period:* 130 to 150 days

## Custom Soil Resource Report

### Map Unit Composition

*Mitta, flooded, and similar soils:* 85 percent

### Description of Mitta, Flooded

#### Setting

*Landform:* Flood plains, fan aprons, fan skirts, inset fans

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave, linear

*Parent material:* Alluvium mixed with volcanic ash in the upper part

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)

*Depth to water table:* About 34 to 49 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 1 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 10.0

*Available water capacity:* High (about 11.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2w

*Land capability (nonirrigated):* 2w

#### Typical profile

*0 to 6 inches:* Ashy silt loam

*6 to 15 inches:* Ashy silt loam

*15 to 34 inches:* Ashy silt loam

*34 to 49 inches:* Silty clay loam

*49 to 60 inches:* Silty clay loam

## 635—Opnish ashy loam, 0 to 2 percent slopes

### Map Unit Setting

*Elevation:* 1,400 to 2,100 feet

*Mean annual precipitation:* 9 to 12 inches

*Mean annual air temperature:* 48 to 50 degrees F

*Frost-free period:* 130 to 150 days

### Map Unit Composition

*Opnish and similar soils:* 85 percent

### Description of Opnish

#### Setting

*Landform:* Alluvial fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

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## Custom Soil Resource Report

*Parent material:* Alluvium with an influence of volcanic ash in the upper part

### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* 20 to 40 inches to strongly contrasting textural stratification

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)

*Depth to water table:* About 24 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 15 percent

*Maximum salinity:* Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 13.0

*Available water capacity:* Low (about 4.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3w

*Land capability (nonirrigated):* 3w

### Typical profile

*0 to 8 inches:* Ashy loam

*8 to 13 inches:* Ashy clay loam

*13 to 26 inches:* Clay loam

*26 to 60 inches:* Extremely gravelly clay loam

## 792—Brickmill gravelly ashy loam, 0 to 5 percent slopes

### Map Unit Setting

*Elevation:* 1,400 to 2,000 feet

*Mean annual precipitation:* 9 to 12 inches

*Mean annual air temperature:* 48 to 50 degrees F

*Frost-free period:* 130 to 150 days

### Map Unit Composition

*Brickmill and similar soils:* 85 percent

### Description of Brickmill

#### Setting

*Landform:* Alluvial fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium with an influence of volcanic ash in the surface

#### Properties and qualities

*Slope:* 0 to 5 percent

*Depth to restrictive feature:* 40 to 60 inches to strongly contrasting textural stratification

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)

*Depth to water table:* About 28 to 38 inches

## Custom Soil Resource Report

*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water capacity:* Low (about 4.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3w  
*Land capability (nonirrigated):* 3w

### Typical profile

*0 to 12 inches:* Gravelly ashy loam  
*12 to 28 inches:* Very gravelly ashy sandy loam  
*28 to 38 inches:* Extremely gravelly sandy loam  
*38 to 49 inches:* Extremely gravelly sandy loam  
*49 to 60 inches:* Extremely gravelly loamy coarse sand

## 795—Nack-Opnish complex, 0 to 2 percent slopes

### Map Unit Setting

*Elevation:* 1,400 to 2,400 feet  
*Mean annual precipitation:* 9 to 12 inches  
*Mean annual air temperature:* 48 to 50 degrees F  
*Frost-free period:* 130 to 150 days

### Map Unit Composition

*Nack and similar soils:* 55 percent  
*Opnish and similar soils:* 40 percent

### Description of Nack

#### Setting

*Landform:* Alluvial fans  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium with a mantle of volcanic ash

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 12 to 20 inches to strongly contrasting textural stratification  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* About 15 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 5.0  
*Available water capacity:* Very low (about 2.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* 4w  
*Land capability (nonirrigated):* 4w

## Custom Soil Resource Report

### Typical profile

*0 to 6 inches:* Gravelly ashy loam  
*6 to 15 inches:* Clay loam  
*15 to 60 inches:* Extremely gravelly sandy clay

### Description of Opnish

#### Setting

*Landform:* Alluvial fans  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium with an influence of volcanic ash in the upper part

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 20 to 40 inches to strongly contrasting textural stratification  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* About 24 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Maximum salinity:* Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 13.0  
*Available water capacity:* Low (about 4.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 3w  
*Land capability (nonirrigated):* 3w

#### Typical profile

*0 to 8 inches:* Ashy loam  
*8 to 13 inches:* Ashy clay loam  
*13 to 26 inches:* Clay loam  
*26 to 60 inches:* Extremely gravelly clay loam

# References

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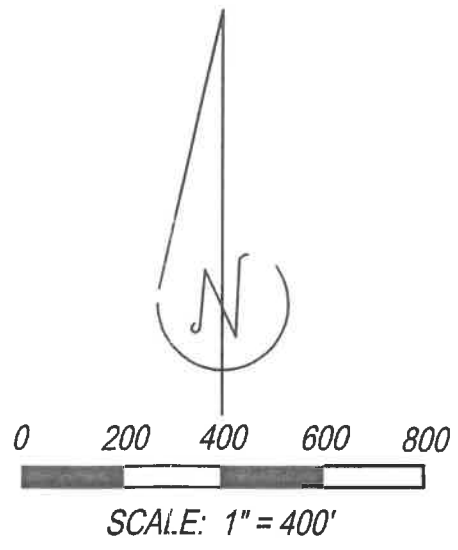
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## Custom Soil Resource Report

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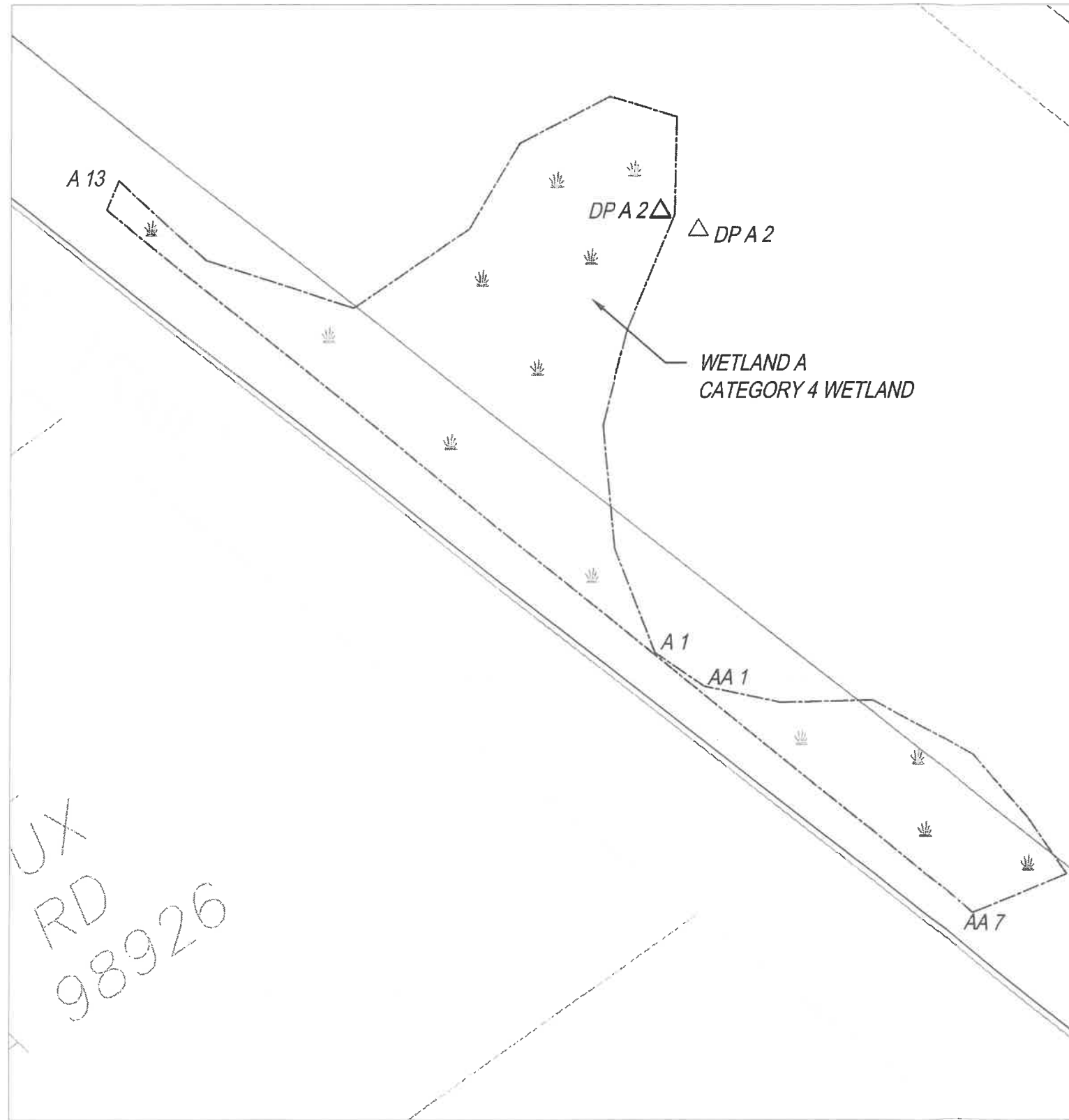
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DRAWN BY:	CML	SCALE:	1"=400'
REVISED:		DESIGNER:	ES

**PALOMINO FIELDS  
WETLAND MAP**

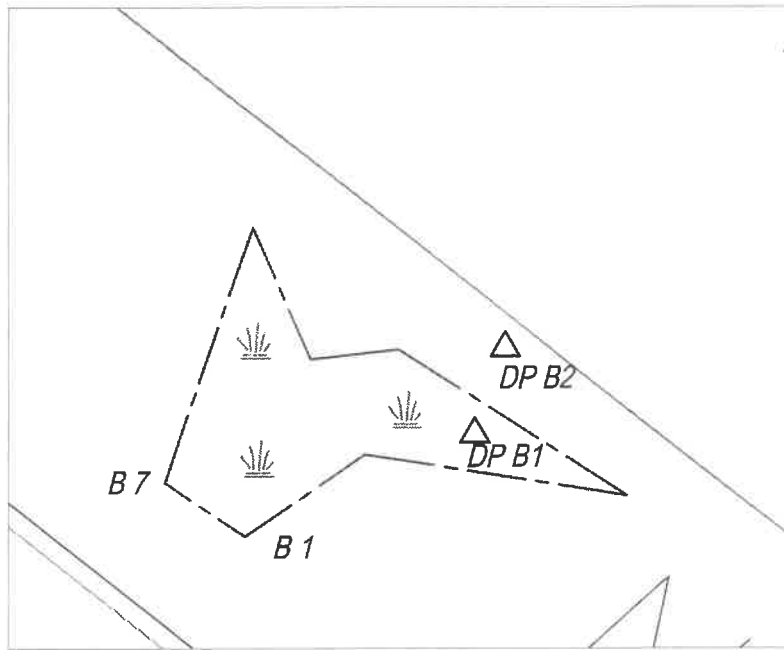


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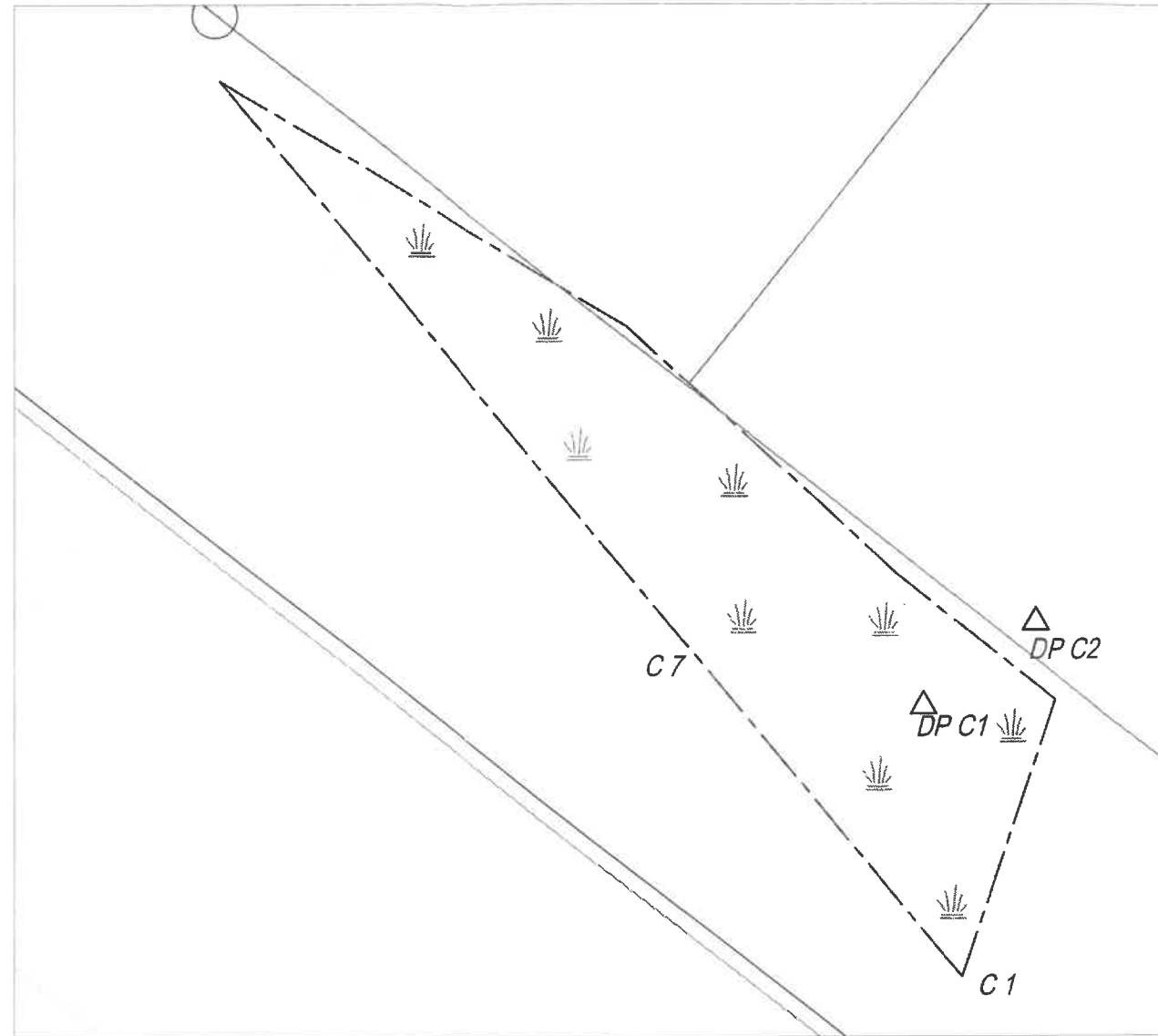
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JOB# A7-273 DATE: SEPT. 2008  
 DRAWN BY: CML SCALE: 1"=50'  
 REVISED: \_\_\_\_\_ DESIGNER: ES

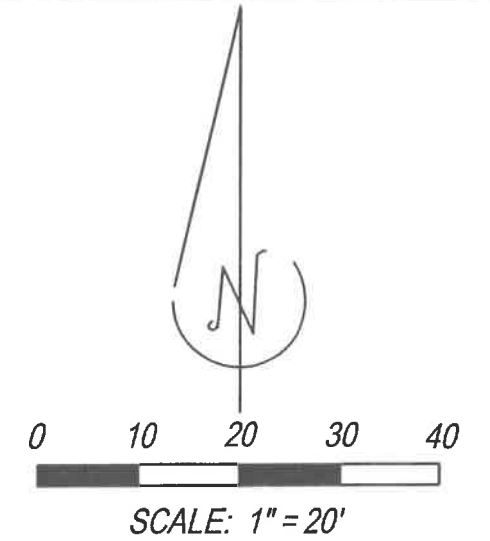
**PALOMINO FIELDS  
 WETLAND A**



WETLAND B - 1"=20'  
CATEGORY 4 WETLAND



WETLAND C - 1"=20'  
CATEGORY 4 WETLAND



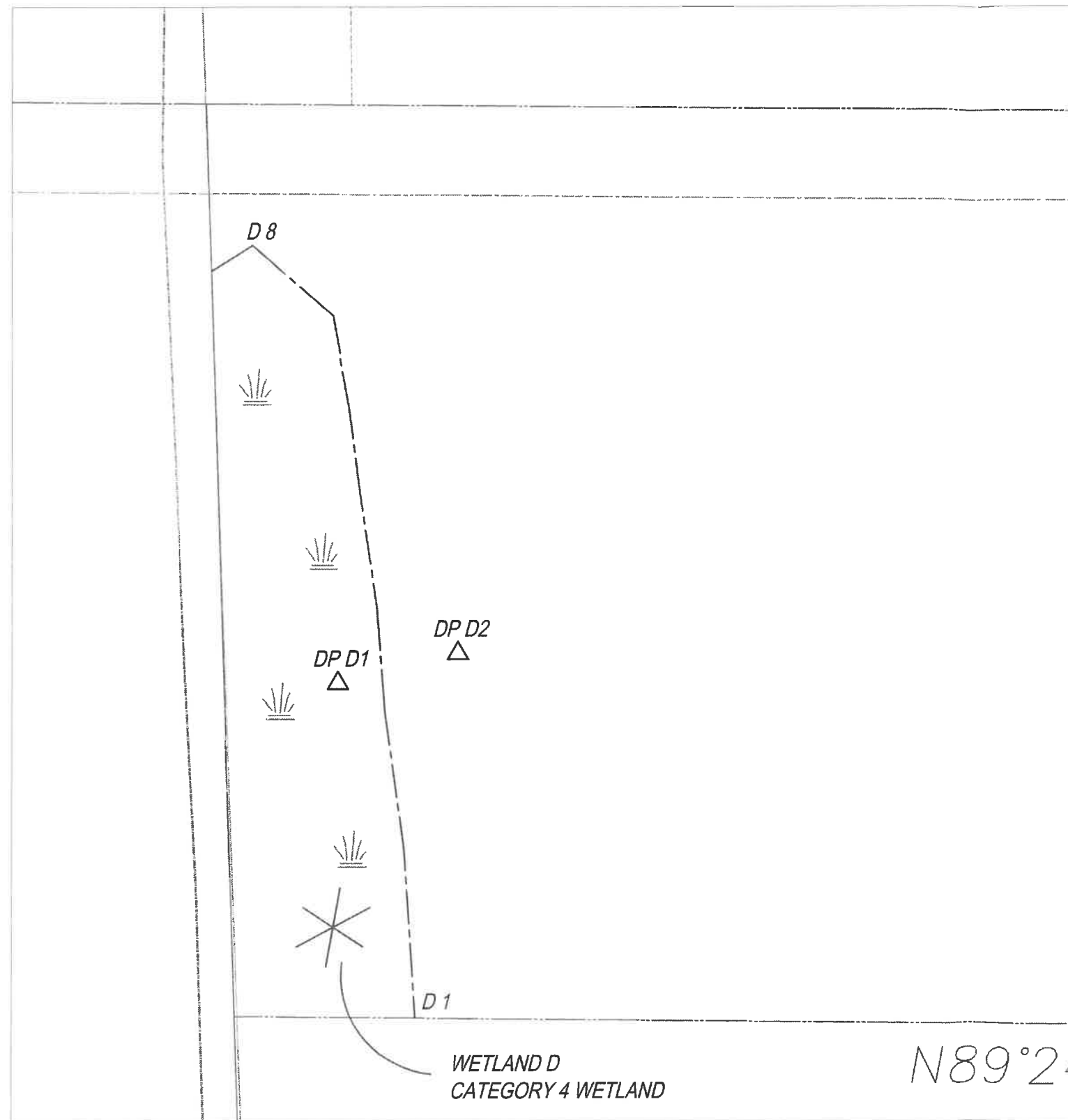
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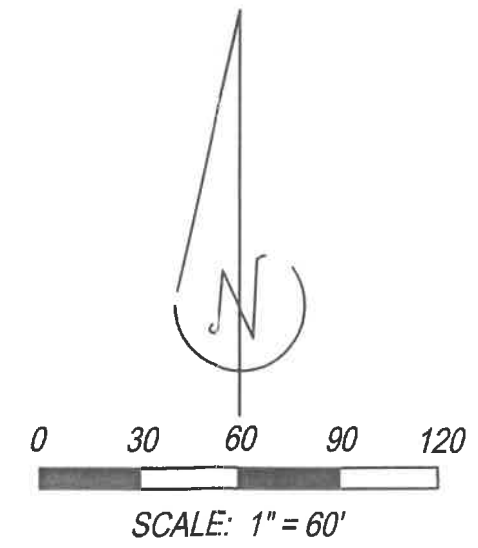
JOB#	A7-273	DATE:	SEPT. 2008
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PALOMINO FIELDS  
WETLANDS B & C





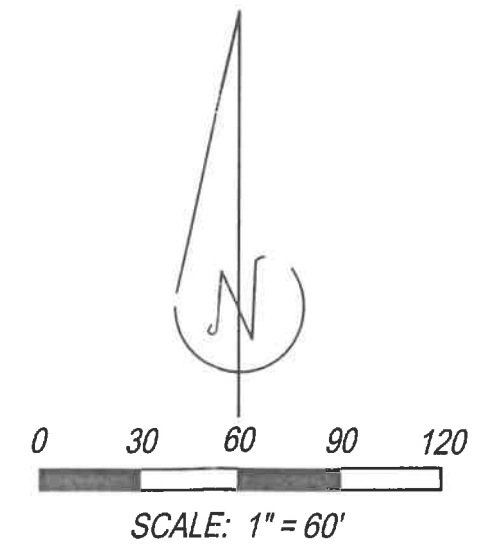
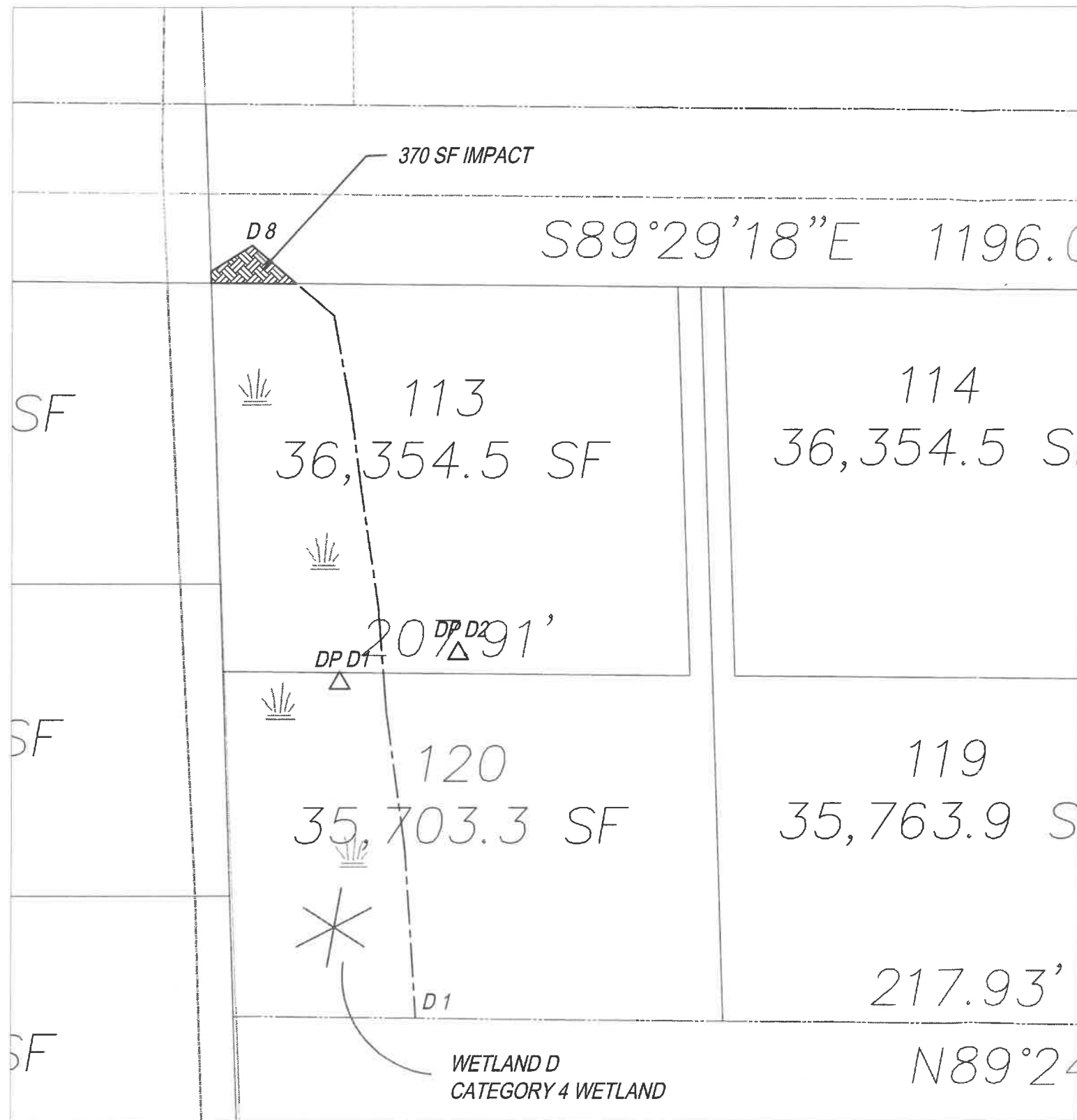
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REVISED:		DESIGNER:	ES

PALOMINO FIELDS  
 WETLAND D



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JOB# A7-273 DATE: SEPT. 2008  
 DRAWN BY: CML SCALE: 1"=60'  
 REVISED: \_\_\_\_\_ DESIGNER: ES

**PALOMINO FIELDS  
 WETLAND IMPACTS**

**ROUTINE WETLAND DETERMINATION DATA FORM**  
*(Washington State Wetlands Identification & Delineation Manual, 1997)*

**SEWALL WETLAND CONSULTING, INC.**  
 1103 West Meeker Street  
 Kent, Washington 98032  
 (253) 859-0515

Project Name/#: Palomino Fields Date: 10-9-07 Investigator: Ed Sewall Data Point: DPA 1  
 Jurisdiction: Kittitas Count State: WA Atypical Analysis: Problem Area:

**VEGETATION**

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Arctostaphylos</i> spp		FAC	
2. <i>Cyperus amurensis</i>		FAC	
3. <i>Elymus sibiricus</i> spp		FAC	
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 100 Hydrophytic vegetation criteria met: Yes No Marginal  
 Comments:

**SOILS**

Mapped Soil Series: Nawam On Hydric Soils List?: Yes No Drainage Class: S poorly drained  
 Depth(0 in) Matrix color Redox concentration color Texture  
 16 in. 10YR 4/2 S. 1H low  
 in.  
 in.  
 in.

Organic soil \_\_, Histic epipedon \_\_, Hydrogen sulfide \_\_, gleyed \_\_, redox concentrations \_\_, redox depletions \_\_, pore linings \_\_, iron concretions \_\_, manganese concretions \_\_, organic matter in surface horizon (sandy soil) \_\_, organic streaking (sandy soils) \_\_, organic pan (sandy soil) \_\_.

Hydric soil criteria met: Yes No Basis: no indicators  
 Comments:

**HYDROLOGY**

Recorded data \_\_, inundation \_\_, saturation \_\_, watermarks \_\_, drift lines \_\_, sediment deposits \_\_, drainage patterns \_\_.

Wetland hydrology criteria met: Yes No Basis: no indicators always dry  
 Comments:

**SUMMARY OF CRITERIA**

Soil Temp. at 19.7" depth: Growing Season? Y/N  
 Hydrophytic vegetation: Y/N Hydric soils: Y/N Wetland hydrology: Y/N  
 Data point meets the criteria of a jurisdictional wetland?: Yes No

**ROUTINE WETLAND DETERMINATION DATA FORM**  
*(Washington State Wetlands Identification & Delineation Manual, 1997)*

**SEWALL WETLAND CONSULTING, INC.**  
 1103 West Meeker Street  
 Kent, Washington 98032  
 (253) 859-0515

*wet A*

Project Name/#: Palomino Fields      Date:      Investigator: Ed Sewall      Data Point: *DPAZ*  
 Jurisdiction: Kittitas Count      State: WA      Atypical Analysis:      Problem Area:

**VEGETATION**

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Typha latifolia</i>		<i>OBI</i>	
2. <i>Cirsium arvense</i>		<i>FAC</i>	
3. <i>Mentha spp</i>		<i>FAC</i>	
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: *100*      Hydrophytic vegetation criteria met:  *Yes*     *No*     *Marginal*  
 Comments:

**SOILS**

Mapped Soil Series: *Nawum*      On Hydric Soils List?: Yes  *No*      Drainage Class: *Spd*  
 Depth(0 in)      Matrix color      Redox concentration color      Texture  
*1/6 in.*      *10YR 2/1*           *silt loam*  
 \_\_\_\_\_ in.      \_\_\_\_\_  
 \_\_\_\_\_ in.      \_\_\_\_\_  
 \_\_\_\_\_ in.      \_\_\_\_\_

Organic soil \_\_, Histic epipedon \_\_, Hydrogen sulfide \_\_, gleyed \_\_, redox concentrations \_\_, redox depletions \_\_, pore linings \_\_, iron concretions \_\_, manganese concretions \_\_, organic matter in surface horizon (sandy soil) \_\_, organic streaking (sandy soils) \_\_, organic pan (sandy soil) \_\_  
 Hydric soil criteria met:  *Yes*     *No*    Basis: *chroma of 1*  
 Comments:

**HYDROLOGY**

Recorded data \_\_, inundation \_\_, saturation *-8"*, watermarks \_\_, drift lines \_\_, sediment deposits \_\_, drainage patterns \_\_  
 Wetland hydrology criteria met:  *Yes*     *No*    Basis: *sat w/in 12" of surface*  
 Comments:

**SUMMARY OF CRITERIA**

Soil Temp. at 19.7" depth: \_\_\_\_\_ Growing Season?  *Y*  *N*  
 Hydrophytic vegetation:  *Y*  *N*      Hydric soils:  *Y*  *N*      Wetland hydrology:  *Y*  *N*  
 Data point meets the criteria of a jurisdictional wetland?:  *Yes*     *No*

**ROUTINE WETLAND DETERMINATION DATA FORM**  
*(Washington State Wetlands Identification & Delineation Manual, 1997)*

**SEWALL WETLAND CONSULTING, INC.**  
 1103 West Meeker Street  
 Kent, Washington 98032  
 (253) 859-0515

wet B  
 DPB-1

Project Name/ #: Palomino Fields      Date: 10-9-07      Investigator: Ed Sewall      Data Point: DPB-1  
 Jurisdiction: Kittitas Count      State: WA      Atypical Analysis:      Problem Area:

**VEGETATION**

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Phalaris arundinacea</i>	H	FACW	
2. <i>Mertensia</i> spp	I+	FAC	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 100      Hydrophytic vegetation criteria met: Yes No Marginal  
 Comments:

**SOILS**

Mapped Soil Series: *Walden*      On Hydric Soils List?  Yes No      Drainage Class: *pd*  
 Depth (0 in)      Matrix color      Redox concentration color      Texture  
 16 in.      10YR 2/1           clay loam  
 in.  
 in.  
 in.

Organic soil, Histic epipedon, Hydrogen sulfide, gleyed, redox concentrations, redox depletions, pore linings, iron concretions, manganese concretions, organic matter in surface horizon (sandy soil), organic streaking (sandy soils), organic pan (sandy soil)

Hydric soil criteria met:  Yes No      Basis: *chroma of 1*  
 Comments:

**HYDROLOGY**

Recorded data, inundation, saturation *0*, watermarks, drift lines, sediment deposits, drainage patterns

Wetland hydrology criteria met:  Yes No      Basis: *sat to surface*  
 Comments:

**SUMMARY OF CRITERIA**

Soil Temp. at 19.7" depth:      Growing Season? *Y/N*  
 Hydrophytic vegetation: *Y/N*      Hydric soils: *Y/N*      Wetland hydrology: *Y/N*  
 Data point meets the criteria of a jurisdictional wetland?:  Yes No

**ROUTINE WETLAND DETERMINATION DATA FORM**  
*(Washington State Wetlands Identification & Delineation Manual, 1997)*

**SEWALL WETLAND CONSULTING, INC.**  
 1103 West Meeker Street  
 Kent, Washington 98032  
 (253) 859-0515

Project Name/#: Palomino Fields      Date: 10-9-07      Investigator: Ed Sewall      Data Point: DPB-2  
 Jurisdiction: Kittitas Count      State: WA      Atypical Analysis:      Problem Area:

**VEGETATION**

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Phleum</i>	H	FAC	
2. <i>Mentha spp</i>	H	FAC	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 100      Hydrophytic vegetation criteria met:  Yes  No  Marginal  
 Comments:

**SOILS**

Mapped Soil Series: *Walden Le*      On Hydric Soils List?:  Yes  No      Drainage Class: *pd*  
 Depth(0 in)      Matrix color      Redox concentration color      Texture  
*16 in.*      *10YR 3/2*           *loam*  
 \_\_\_\_\_ in.  
 \_\_\_\_\_ in.  
 \_\_\_\_\_ in.

Organic soil \_\_, Histic epipedon \_\_, Hydrogen sulfide \_\_, gleyed \_\_, redox concentrations \_\_, redox depletions \_\_, pore linings \_\_, iron concretions \_\_, manganese concretions \_\_, organic matter in surface horizon (sandy soil) \_\_, organic streaking (sandy soils) \_\_, organic pan (sandy soil) \_\_.

Hydric soil criteria met:  Yes  No      Basis: *no indicators*  
 Comments:

**HYDROLOGY**

Recorded data \_\_, inundation \_\_, saturation \_\_, watermarks \_\_, drift lines \_\_, sediment deposits \_\_, drainage patterns \_\_.

Wetland hydrology criteria met: Yes  No       Basis: *no indicators*  
 Comments:

**SUMMARY OF CRITERIA**

Soil Temp. at 19.7" depth: \_\_\_\_\_ Growing Season?:  Y  N  
 Hydrophytic vegetation:  Y  N      Hydric soils:  Y  N      Wetland hydrology:  Y  N  
 Data point meets the criteria of a jurisdictional wetland?: Yes  No

**ROUTINE WETLAND DETERMINATION DATA FORM**  
 (Washington State Wetlands Identification & Delineation Manual, 1997)

**SEWALL WETLAND CONSULTING, INC.**  
 1103 West Meeker Street  
 Kent, Washington 98032  
 (253) 859-0515

wet C

Project Name/#: Palomino Fields Date: 10-9-07 Investigator: Ed Sewall Data Point: D#C1  
 Jurisdiction: Kittitas Count State: WA Atypical Analysis: Problem Area:

**VEGETATION**

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Salix erigona</i>	S	FACW	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 100 Hydrophytic vegetation criteria met:  Yes  No  Marginal  
 Comments: old burrow pit for trail / Railroad

**SOILS**

Mapped Soil Series: M1H On Hydric Soils List?:  Yes  No Drainage Class: somewhat poorly drained  
 Depth(0 in) Matrix color Redox concentration color Texture  
 1/6 in. 10YR 2/1 10m  
 in.  
 in.  
 in.

Organic soil, Histic epipedon, Hydrogen sulfide, gleyed, redox concentrations, redox depletions, pore linings, iron concretions, manganese concretions, organic matter in surface horizon (sandy soil), organic streaking (sandy soils), organic pan (sandy soil)

Hydric soil criteria met:  Yes  No Basis: Chroma of 1  
 Comments:

**HYDROLOGY**

Recorded data, inundation, saturation 0", watermarks, drift lines, sediment deposits, drainage patterns

Wetland hydrology criteria met:  Yes  No Basis: Sat to surface  
 Comments:

**SUMMARY OF CRITERIA**

Soil Temp. at 19.7" depth: Growing Season:  Y  N  
 Hydrophytic vegetation:  Y  N Hydric soils:  Y  N Wetland hydrology:  Y  N  
 Data point meets the criteria of a jurisdictional wetland?:  Yes  No

**ROUTINE WETLAND DETERMINATION DATA FORM**  
*(Washington State Wetlands Identification & Delineation Manual, 1997)*

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 1103 West Meeker Street  
 Kent, Washington 98032  
 (253) 859-0515

Project Name/ #: Palomino Fields      Date: 10-9-07      Investigator: Ed Sewall      Data Point: DPC-2  
 Jurisdiction: Kittitas Count      State: WA      Atypical Analysis:      Problem Area:

**VEGETATION**

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Bromus tectorum</i>	H	NI	
2. <i>Agrropyron repens</i>	H	FAC	
3. <i>Cirsium arvense</i>	H	FAC	
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 66      Hydrophytic vegetation criteria met:  Yes  No  Marginal  
 Comments:

**SOILS**

Mapped Soil Series: *Mitta*      On Hydric Soils List?: Yes  No       Drainage Class: \_\_\_\_\_  
 Depth(0 in)      Matrix color      Redox concentration color      Texture  
 16 in.      10YR 3/3           *grainy loam*  
 \_\_\_\_\_ in.  
 \_\_\_\_\_ in.  
 \_\_\_\_\_ in.

Organic soil \_\_, Histic epipedon \_\_, Hydrogen sulfide \_\_, gleyed \_\_, redox concentrations \_\_, redox depletions \_\_, pore linings \_\_, iron concretions \_\_, manganese concretions \_\_, organic matter in surface horizon (sandy soil) \_\_, organic streaking (sandy soils) \_\_, organic pan (sandy soil) \_\_.

Hydric soil criteria met: Yes  No       Basis: *no indicators*  
 Comments:

**HYDROLOGY**

Recorded data \_\_, inundation \_\_, saturation \_\_, watermarks \_\_, drift lines \_\_, sediment deposits \_\_, drainage patterns \_\_.

Wetland hydrology criteria met: Yes  No       Basis: *no indicators*  
 Comments:

**SUMMARY OF CRITERIA**

Soil Temp. at 19.7" depth: \_\_\_\_\_ Growing Season?  Y  N  
 Hydrophytic vegetation  Y  N      Hydric soils:  Y  N      Wetland hydrology:  Y  N  
 Data point meets the criteria of a jurisdictional wetland?: Yes  No



**ROUTINE WETLAND DETERMINATION DATA FORM**  
 (Washington State Wetlands Identification & Delineation Manual, 1997)

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 (253) 859-0515

wet D

Project Name/ #: Palomino Fields Date: 10-9-07 Investigator: Ed Sewall Data Point: DP D1  
 Jurisdiction: Kittitas Count State: WA Atypical Analysis: Problem Area:

**VEGETATION**

Dominant plant species	Stratum	Indicator	Coverage %
1. Carex spp.		FAC-OBL	
2. Agrostis spp.		FAC	
3. Poa spp.		FAC	
4. Phlox pilularis		FAC	
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 100 Hydrophytic vegetation criteria met: Yes No Marginal  
 Comments:

**SOILS**

Mapped Soil Series: Nach-Bricknell On Hydric Soils List?: Yes  No Drainage Class: Somewhat Poorly drained  
 Depth (0 in) Matrix color Redox concentration color Texture  
 16 in. 10 YR 2/2 common medium, faint gravelly silt loam  
 in.  
 in.  
 in.

Organic soil, Histic epipedon, Hydrogen sulfide, gleyed, redox concentrations, redox depletions, pore linings, iron concretions, manganese concretions, organic matter in surface horizon (sandy soil), organic streaking (sandy soils), organic pan (sandy soil)

Hydric soil criteria met:  Yes No Basis: chroma of 2 w/redox features  
 Comments:

**HYDROLOGY**

Recorded data, inundation, saturation -10', watermarks, drift lines, sediment deposits, drainage patterns

Wetland hydrology criteria met:  Yes No Basis: sat w/ 12" surface  
 Comments:

**SUMMARY OF CRITERIA**

Soil Temp. at 19.7" depth: Growing Season?  N  
 Hydrophytic vegetation  N Hydric soils  N Wetland hydrology  N  
 Data point meets the criteria of a jurisdictional wetland?:  Yes No

**ROUTINE WETLAND DETERMINATION DATA FORM**  
*(Washington State Wetlands Identification & Delineation Manual, 1997)*

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 1103 West Meeker Street  
 Kent, Washington 98032  
 (253) 859-0515

Project Name/#: Palomino Fields      Date: 10-9-07      Investigator: Ed Sewall      Data Point: DPDZ  
 Jurisdiction: Kittitas Count      State: WA      Atypical Analysis:      Problem Area:

**VEGETATION**

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Poa spp</i>	H	FAC	
2. <i>Phleum pratense</i>	H	FAC	
3. <i>Bromus tectorum</i>	H	NI	
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 66      Hydrophytic vegetation criteria met: Yes No Marginal  
 Comments:

**SOILS**

Mapped Soil Series: *Nach Brickmill*      On Hydric Soils List?: Yes No      Drainage Class: *spd*  
 Depth(0 in)      Matrix color      Redox concentration color      Texture  
 4 in.      10YR 3/2      —      —  
 6 in.      10YR 2/2      —      —  
 in.  
 in.

Organic soil \_\_, Histic epipedon \_\_, Hydrogen sulfide \_\_, gleyed \_\_, redox concentrations \_\_, redox depletions \_\_, pore linings \_\_, iron concretions \_\_, manganese concretions \_\_, organic matter in surface horizon (sandy soil) \_\_, organic streaking (sandy soils) \_\_, organic pan (sandy soil) \_\_.  
 Hydric soil criteria met: Yes No      Basis: *no indicators*  
 Comments:

**HYDROLOGY**

Recorded data \_\_, inundation \_\_, saturation \_\_, watermarks \_\_, drift lines \_\_, sediment deposits \_\_, drainage patterns \_\_.  
 Wetland hydrology criteria met: Yes No      Basis: *dry no indicators*  
 Comments:

**SUMMARY OF CRITERIA**

Soil Temp. at 19.7" depth:      Growing Season?: Y/N  
 Hydrophytic vegetation Y/N      Hydric soils: Y/N      Wetland hydrology: Y/N  
 Data point meets the criteria of a jurisdictional wetland?: Yes No

## WETLANDS RATING FIELD DATA FORM

**BACKGROUND INFORMATION:**

Name of Rater: Ed Sewall Affiliation: Sewall Wetland Cons. Date: 10-22-07

Name of wetland (if known): Wetland A - Palomares

Government Jurisdiction of wetland: Kittitas County

Location: 1/4 S: \_\_\_\_\_ of 1/4 S: \_\_\_\_\_ SEC: \_\_\_\_\_ TOWNSHIP: \_\_\_\_\_ RANGE: \_\_\_\_\_

**SOURCES OF INFORMATION: (Check all sources that apply)**

Site visit:  USGS Topo Map:  NWI map:  Aerial Photo:  Soils survey:

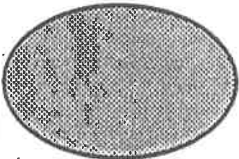
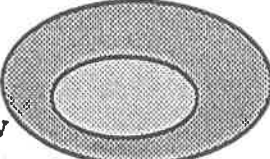
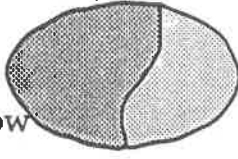
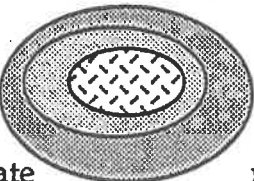
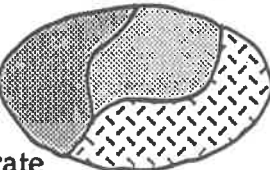
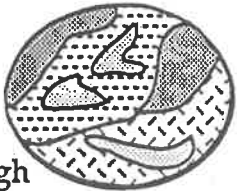
Other: \_\_\_\_\_ Describe: \_\_\_\_\_

WHEN THE FIELD DATA FORM IS COMPLETE ENTER CATEGORY HERE: 4

<p><b>Q.1. High Quality Natural Heritage Wetland.</b></p> <p>Answer this question if you have adequate information or experience to do so. If not find someone with the expertise to answer the questions. Then, if the answer to questions 1a, 1b and 1c are all NO, contact the Natural Heritage program of DNR.</p> <p>1a. Is there significant evidence of human-caused changes to topography or hydrology of the wetland? Significant changes <u>could</u> include clearing, grading, filling, logging of the wetland or its immediate buffer, or culverts, ditches, dredging, diking or drainage of the wetland. Briefly describe the changes and your information source/s: <u>carved to agriculture. Appears to be excavated + buried</u></p> <hr/> <p>1b. Are there populations of non-native plants which are currently present and appear to be invading native populations? Briefly describe any non-native plant populations and information source(s): _____</p> <hr/> <p>1c. Is there significant evidence of human-caused disturbance of the water quality of the system? Degradation of water quality could be evidenced by culverts entering the system, direct road/parking lot runoff, evidence of historic dumping of wastes, oily sheens, extreme eutrophic conditions, livestock use or dead fish etc. Briefly describe: _____</p> <hr/>	<p>Circle answers:</p> <p><span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Yes: go to Q.3.</span> No: go to 1b.</p> <p>Yes: go to Q.3. No: go to 1c.</p> <p>Yes: go to Q.3. No: <u>Possible</u> <u>Category I</u></p>
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<p><b>Q.2. Regionally Rare Native Wetland Communities</b></p> <p>The Department of Ecology is developing a methodology for regionally rare native wetland communities. It is not yet available for use.</p>	
<p><b>Q.3. Irreplaceable Ecological Functions:</b></p> <p>Does the wetland:</p> <ul style="list-style-type: none"> <li>- have at a least 1/2 acre of contiguous peat wetland; .....</li> <li>- <u>or</u>, have a forested class greater than 1 acre ; .....</li> </ul>	<p>No to both: go to Q.4.</p> <p>Yes: go to 3a.</p> <p>Yes: go to 3b.</p>
<p><b>Q.3a. Peat Wetlands.</b></p> <p>3a1. Does at least 1/2 acre of the contiguous peat wetland have &lt; 25% areal cover of any combination of species from the list of invasive/exotic species on p.19, <u>and</u> have &lt; 80% areal cover of <i>Spirea douglasii</i>? .....</p>	<p>Yes: Category I No: go to Q.4.</p>
<p><b>Q.3b. Mature forested wetland.</b></p> <p>3b1. Is the average age of dominant trees in the forested wetland &gt; 80 years? .....</p> <p>3b2. Is the average age of dominant trees in the forested wetland 50-80 years, <u>and</u> is the structural diversity high as characterized by a multi-layer community of trees &gt; 50' tall <u>and</u> trees 20'-49' tall <u>and</u> shrubs <u>and</u> herbaceous groundcover? ..</p> <p>3b3. Is &gt; 50% (areal cover) of the dominant plants in one or more layers (canopy, young trees, shrubs, herbs) invasive/exotic plant species from the p.19 list? ..</p>	<p>Yes: Category I No: go to 3b2.</p> <p>Yes: go to 3b3. No: go to Q.5.</p> <p>Yes: go to Q.5. No: Category I.</p>
<p><b>Q.4. Category IV wetlands</b></p> <p>4.1. Is the wetland: less than 1 acre <u>and</u>, hydrologically isolated <u>and</u>, comprised of <u>one</u> vegetated class that is dominated (&gt; 80% areal cover) by <u>one</u> species from the list in guidance p.18. .... <i>Typha latifolia</i></p> <p>4.2. Is the wetland: less than two acres <u>and</u>, hydrologically isolated, with <u>one</u> vegetated class, and &gt; 90% of areal cover is <u>any</u> combination of species from the list in guidance p.19. ....</p>	<p>Yes: Category IV No: go to 4.2.</p> <p>Yes: Category IV No: go to Q.5.</p>

Q.5. Significant habitat value. Answer all questions and enter data requested.		Circle scores that qualify																																							
<p>5a. <u>Total wetland area</u></p> <p>Estimate area, select from choices in the near-right column, and score in the far column:</p> <p>Enter acreage of wetland here: _____ acres, and source: _____</p>	<p>acres</p> <p>&gt; 20.00</p> <p>10 - 19.99</p> <p>5 - 9.99</p> <p>1 - 4.99</p> <p>0.1 - 0.99</p> <p>&lt;0.1</p>	<p>Yes=6</p> <p>Yes=5</p> <p>Yes=4</p> <p>Yes=3</p> <p>Yes=2</p> <p>Yes=1</p>																																							
<p>5b. <u>Wetland classes</u>: Circle the wetland classes below that qualify:</p> <p><u>Open Water</u>: if the area of open water is &gt; 1/2 acre or &gt; 10% of the total wetland area. Source: _____</p> <p><u>Aquatic Beds</u>: if the area of aquatic beds &gt; 10% of the <u>open water</u> area or &gt; 1/2 acre.</p> <p><u>Emergent</u>: if the area of emergent class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p><u>Scrub-Shrub</u>: if the area of scrub-shrub class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p><u>Forested</u>: if area of forested class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p>Add the number of wetland classes, above, that qualify, and then score according to the columns at right.</p> <p>e.g. If there are 4 classes (aquatic beds, open water, emergent &amp; scrub-shrub), you would circle 8 points in the far right column.</p>																																									
	<p># of classes</p> <p>1 . . . . .</p> <p>2 . . . . .</p> <p>3 . . . . .</p> <p>4 . . . . .</p> <p>5 . . . . .</p>	<p>Yes =1</p> <p>Yes =3</p> <p>Yes =5</p> <p>Yes =8</p> <p>Yes =11</p>																																							
<p>5c. <u>Plant species diversity</u></p> <p>For all wetland classes (at right) that qualify in 5b. above, count the number of different plant species you can find. You do not have to name them.</p> <p>Score in column at far right:</p> <p>e.g. If a wetland has an aquatic bed class with 3 species, an emergent class with 4 species and a scrub-shrub class with 2 species you would circle 2, 2, and 1 in the far column.</p>	<table border="1"> <thead> <tr> <th>Class</th> <th># of species</th> <th></th> </tr> </thead> <tbody> <tr> <td><u>Aquatic Bed</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>" "</td> <td>3...</td> <td>Yes=2</td> </tr> <tr> <td>" "</td> <td>&gt;3...</td> <td>Yes=3</td> </tr> <tr> <td><u>Emergent</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>" "</td> <td>3-4...</td> <td>Yes=2</td> </tr> <tr> <td>" "</td> <td>&gt;4...</td> <td>Yes=3</td> </tr> <tr> <td><u>Scrub-Shrub</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>" "</td> <td>3-4...</td> <td>Yes=2</td> </tr> <tr> <td>" "</td> <td>&gt;4...</td> <td>Yes=3</td> </tr> <tr> <td><u>Forested</u></td> <td>1...</td> <td>Yes=1</td> </tr> <tr> <td>" "</td> <td>2...</td> <td>Yes=2</td> </tr> <tr> <td>" "</td> <td>&gt;2...</td> <td>Yes=3</td> </tr> </tbody> </table>	Class	# of species		<u>Aquatic Bed</u>	1-2...	Yes=1	" "	3...	Yes=2	" "	>3...	Yes=3	<u>Emergent</u>	1-2...	Yes=1	" "	3-4...	Yes=2	" "	>4...	Yes=3	<u>Scrub-Shrub</u>	1-2...	Yes=1	" "	3-4...	Yes=2	" "	>4...	Yes=3	<u>Forested</u>	1...	Yes=1	" "	2...	Yes=2	" "	>2...	Yes=3	
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<u>Forested</u>	1...	Yes=1																																							
" "	2...	Yes=2																																							
" "	>2...	Yes=3																																							

<p>5d. <u>Structural diversity.</u>          If the wetland has a forested class, add 1 point for each of the following:</p> <ul style="list-style-type: none"> <li>-trees &gt; 50' tall .....</li> <li>-trees 20'- 49' tall .....</li> <li>-shrubs .....</li> <li>-herbaceous ground cover.....</li> </ul>	<p>Yes=1          Yes=1          Yes=1          Yes=1</p>
<p>5e. Decide from the diagrams below whether <u>interspersion between wetland classes</u> is high, moderate, low or none?</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>none</p> </div> <div style="text-align: center;">  <p>low</p> </div> <div style="text-align: center;">  <p>low</p> </div> <div style="text-align: center;">  <p>moderate</p> </div> <div style="text-align: center;">  <p>moderate</p> </div> <div style="text-align: center;">  <p>high</p> </div> </div>	<p>High=3          Moderate=2          Low=1          None=0</p>
<p>5f. <u>Habitat features.</u></p> <p>Answer questions below, circle features that apply, and score to right:</p> <ul style="list-style-type: none"> <li>Is there evidence of current use by beavers ? .....</li> <li>Is a heron rookery located within 300'? .....</li> <li>Are raptor nest/s located within 300'? .....</li> <li>Are there at least 3 standing dead trees (snags) per acre? .....</li> <li>Are any of these standing dead trees (snags) &gt; 10" in diameter? .....</li> <li>Are there any other perches (wires, poles or posts)? .....</li> <li>Are there at least 3 downed logs per acre? .....</li> </ul>	<p>Yes=3          Yes=2          Yes=1          Yes=1          Yes=1          Yes=1          Yes=1</p>
<p>5g. <u>Connection to streams.</u> (Score one answer only.)</p> <p>Is the wetland connected at any time of the year via surface water:</p> <ul style="list-style-type: none"> <li>to a perennial stream or a seasonal stream <u>with</u> fish; .....</li> <li><u>or</u>, to a seasonal stream <u>without</u> fish; .....</li> <li><u>or</u>, is not connected to any stream? .....</li> </ul>	<p>Yes=6          Yes=4          Yes=0</p>

5h. Buffers.

**STEP 1**

Estimate (to the nearest 5%) the % of each buffer or land-use type (below) that adjoins the wetland boundary.

Then multiply the %/s by the factor(s) below and enter result in column to right:

**STEP 2**

Multiply result(s) of step 1:  
by 1, if buffer width is 25-50';  
by 2, if buffer width is 50-100';  
by 3, if buffer width is >100'.

Enter results below and add subscore:

roads, buildings or parking lots:

%      x 0 =

0

lawn, grazed pasture, vineyards or annual crops:

%      x 1 =

     x      =     

ungrazed grassland or orchards:

%      x 2 =

     x      =     

open water or native grasslands:

%      x 3 =

     x      =     

forest or shrub:

%      x 4 =

     x      =     

Add Buffer total =     

**STEP 3.** Score points according to table at right :

Buffer total

900-1200...	Yes=4
600-899...	Yes=3
300-599...	Yes=2
100-299...	Yes=1

5i. Connection to other habitat areas:

- Is there a riparian corridor to other wetlands within 0.25 of a mile, or a corridor > 100' wide with good forest or shrub cover to any other habitat area?..... Yes =6
- Is there a narrow corridor < 100' wide with good cover or a wide corridor > 100' wide with low cover to any other habitat area?..... Yes=4
- Is there a narrow corridor < 100' wide with low cover or a significant habitat area within 0.25 mile but no corridor?..... Yes=1
- Is the wetland and buffer completely isolated by development and or cultivated agricultural land?..... Yes=0

NOW: Add the scores circled (for Q.5a - Q.5i above) to get a Total. ....  
Is the Total greater than or equal to 22 points. ....

Total =         
Yes: Category II  
No: Category III

## WETLANDS RATING FIELD DATA FORM

**BACKGROUND INFORMATION:**

Name of Rater: Ed Small Affiliation: Wetland B Date: 10-27-07

Name of wetland (if known): Wetland B - Palomino

Government Jurisdiction of wetland: Wittman Co.

Location: 1/4 S: \_\_\_\_\_ of 1/4 S: \_\_\_\_\_ SEC: \_\_\_\_\_ TWSHP: \_\_\_\_\_ RNGE: \_\_\_\_\_

**SOURCES OF INFORMATION: (Check all sources that apply)**

Site visit:  USGS Topo Map:  NWI map:  Aerial Photo:  Soils survey:

Other:  Describe: \_\_\_\_\_

WHEN THE FIELD DATA FORM IS COMPLETE ENTER CATEGORY HERE:

4

**Q.1. High Quality Natural Heritage Wetland.**

Circle answers:

Answer this question if you have adequate information or experience to do so. If not find someone with the expertise to answer the questions. Then, if the answer to questions 1a, 1b and 1c are all NO, contact the Natural Heritage program of DNR.

1a. Is there significant evidence of human-caused changes to topography or hydrology of the wetland? Significant changes could include clearing, grading, filling, logging of the wetland or its immediate buffer, or culverts, ditches, dredging, diking or drainage of the wetland. Briefly describe the changes and your information source/s: Bridged, irr pipe discharges into

Yes: go to Q.3.  
No: go to 1b.

1b. Are there populations of non-native plants which are currently present and appear to be invading native populations? Briefly describe any non-native plant populations and information source(s): \_\_\_\_\_

Yes: go to Q.3.  
No: go to 1c.

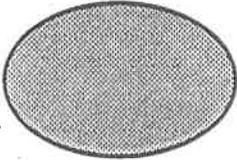
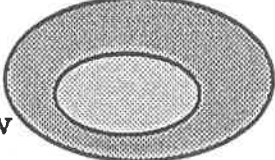
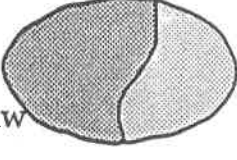
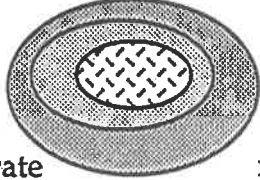
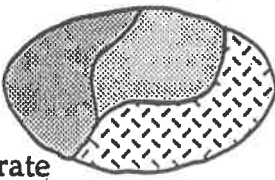
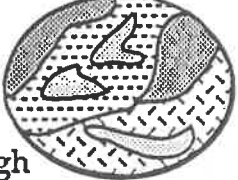
1c. Is there significant evidence of human-caused disturbance of the water quality of the system? Degradation of water quality could be evidenced by culverts entering the system, direct road/parking lot runoff, evidence of historic dumping of wastes, oily sheens, extreme eutrophic conditions, livestock use or dead fish etc. Briefly describe: \_\_\_\_\_

Yes: go to Q.3.  
No: Possible Category I



<p><b>Q.2. Regionally Rare Native Wetland Communities</b></p> <p>The Department of Ecology is developing a methodology for regionally rare native wetland communities. It is not yet available for use.</p>	
<p><b>Q.3. Irreplaceable Ecological Functions:</b></p> <p>Does the wetland:</p> <ul style="list-style-type: none"> <li>- have at a least 1/2 acre of contiguous peat wetland; .....</li> <li>- <u>or</u>, have a forested class greater than 1 acre ; .....</li> </ul>	<p>No to both: go to Q.4.</p> <p>Yes: go to 3a.</p> <p>Yes: go to 3b.</p>
<p><b>Q.3a. Peat Wetlands.</b></p> <p>3a1. Does at least 1/2 acre of the contiguous peat wetland have &lt; 25% areal cover of any combination of species from the list of invasive/exotic species on p.19, <u>and</u> have &lt; 80% areal cover of <i>Spirea douglasii</i>? .....</p>	<p>Yes: Category I No: go to Q.4.</p>
<p><b>Q.3b. Mature forested wetland.</b></p> <p>3b1. Is the average age of dominant trees in the forested wetland &gt; 80 years? .....</p> <p>3b2. Is the average age of dominant trees in the forested wetland 50-80 years, <u>and</u> is the structural diversity high as characterized by a multi-layer community of trees &gt; 50' tall <u>and</u> trees 20'-49' tall <u>and</u> shrubs <u>and</u> herbaceous groundcover? ..</p> <p>3b3. Is &gt; 50% (areal cover) of the dominant plants in one or more layers (canopy, young trees, shrubs, herbs) invasive/exotic plant species from the p.19 list? ..</p>	<p>Yes: Category I No: go to 3b2.</p> <p>Yes: go to 3b3. No: go to Q.5.</p> <p>Yes: go to Q.5. No: Category I</p>
<p><b>Q.4. Category IV wetlands</b></p> <p>4.1. Is the wetland: less than 1 acre <u>and</u>, hydrologically isolated <u>and</u>, comprised of <u>one</u> vegetated class that is dominated (&gt; 80% areal cover) by <u>one</u> species from the list in guidance p.18. ....</p> <p>4.2. Is the wetland: less than two acres <u>and</u>, hydrologically isolated, with <u>one</u> vegetated class, and &gt; 90% of areal cover is <u>any</u> combination of species from the list in guidance p.19. ....</p>	<p>Yes: Category IV No: go to 4.2.</p> <p>Yes: Category IV No: go to Q.5.</p>

Q.5. Significant habitat value. Answer all questions and enter data requested.		Circle scores that qualify																																							
<p>5a. <u>Total wetland area</u></p> <p>Estimate area, select from choices in the near-right column, and score in the far column:</p> <p>Enter acreage of wetland here: _____ acres, and source: _____</p>	<p>acres</p> <p>&gt; 20.00</p> <p>10 - 19.99</p> <p>5 - 9.99</p> <p>1 - 4.99</p> <p>0.1 - 0.99</p> <p>&lt;0.1</p>	<p>Yes=6</p> <p>Yes=5</p> <p>Yes=4</p> <p>Yes=3</p> <p>Yes=2</p> <p>Yes=1</p>																																							
<p>5b. <u>Wetland classes</u>: Circle the wetland classes below that qualify:</p> <p><u>Open Water</u>: if the area of open water is &gt; 1/2 acre or &gt; 10% of the total wetland area. Source: _____</p> <p><u>Aquatic Beds</u>: if the area of aquatic beds &gt; 10% of the <u>open water</u> area or &gt; 1/2 acre.</p> <p><u>Emergent</u>: if the area of emergent class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p><u>Scrub-Shrub</u>: if the area of scrub-shrub class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p><u>Forested</u>: if area of forested class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p>Add the number of wetland classes, above, that qualify, and then score according to the columns at right.</p> <p>e.g. If there are 4 classes (aquatic beds, open water, emergent &amp; scrub-shrub), you would circle 8 points in the far right column.</p>																																									
	<p><u># of classes</u></p> <p>1 . . . . .</p> <p>2 . . . . .</p> <p>3 . . . . .</p> <p>4 . . . . .</p> <p>5 . . . . .</p>	<p>Yes =1</p> <p>Yes =3</p> <p>Yes =5</p> <p>Yes =8</p> <p>Yes =11</p>																																							
<p>5c. <u>Plant species diversity</u>.</p> <p>For all wetland classes (at right) that qualify in 5b. above, count the number of different plant species you can find. You do not have to name them.</p> <p>Score in column at far right:</p> <p>e.g. If a wetland has an aquatic bed class with 3 species, an emergent class with 4 species and a scrub-shrub class with 2 species you would circle 2, 2, and 1 in the far column.</p>	<table border="1"> <thead> <tr> <th>Class</th> <th># of species</th> <th></th> </tr> </thead> <tbody> <tr> <td><u>Aquatic Bed</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>"</td> <td>3...</td> <td>Yes=2</td> </tr> <tr> <td>"</td> <td>&gt;3...</td> <td>Yes=3</td> </tr> <tr> <td><u>Emergent</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>"</td> <td>3-4...</td> <td>Yes=2</td> </tr> <tr> <td>"</td> <td>&gt;4...</td> <td>Yes=3</td> </tr> <tr> <td><u>Scrub-Shrub</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>"</td> <td>3-4...</td> <td>Yes=2</td> </tr> <tr> <td>"</td> <td>&gt;4...</td> <td>Yes=3</td> </tr> <tr> <td><u>Forested</u></td> <td>1...</td> <td>Yes=1</td> </tr> <tr> <td>"</td> <td>2...</td> <td>Yes=2</td> </tr> <tr> <td>"</td> <td>&gt;2...</td> <td>Yes=3</td> </tr> </tbody> </table>	Class	# of species		<u>Aquatic Bed</u>	1-2...	Yes=1	"	3...	Yes=2	"	>3...	Yes=3	<u>Emergent</u>	1-2...	Yes=1	"	3-4...	Yes=2	"	>4...	Yes=3	<u>Scrub-Shrub</u>	1-2...	Yes=1	"	3-4...	Yes=2	"	>4...	Yes=3	<u>Forested</u>	1...	Yes=1	"	2...	Yes=2	"	>2...	Yes=3	
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<p>5d. <u>Structural diversity.</u>          If the wetland has a forested class, add 1 point for each of the following:</p> <ul style="list-style-type: none"> <li>-trees &gt; 50' tall ..... Yes=1</li> <li>-trees 20'- 49' tall ..... Yes=1</li> <li>-shrubs..... Yes=1</li> <li>-herbaceous ground cover..... Yes=1</li> </ul>	
<p>5e. Decide from the diagrams below whether <u>interspersion between wetland classes</u> is high, moderate, low or none?</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>none</p> </div> <div style="text-align: center;">  <p>low</p> </div> <div style="text-align: center;">  <p>low</p> </div> <div style="text-align: center;">  <p>moderate</p> </div> <div style="text-align: center;">  <p>moderate</p> </div> <div style="text-align: center;">  <p>high</p> </div> </div> <div style="text-align: right; margin-top: 20px;"> <p>High=3          Moderate=2          Low=1          None=0</p> </div>	
<p>5f. <u>Habitat features.</u></p> <p>Answer questions below, circle features that apply, and score to right:</p> <ul style="list-style-type: none"> <li>Is there evidence of current use by beavers ? ..... Yes=3</li> <li>Is a heron rookery located within 300'? ..... Yes=2</li> <li>Are raptor nest/s located within 300'? ..... Yes=1</li> <li>Are there at least 3 standing dead trees (snags) per acre?..... Yes=1</li> <li>Are any of these standing dead trees (snags) &gt; 10" in diameter?..... Yes=1</li> <li>Are there any other perches (wires, poles or posts)? ..... Yes=1</li> <li>Are there at least 3 downed logs per acre?..... Yes=1</li> </ul>	
<p>5g. <u>Connection to streams.</u> (Score one answer only.)</p> <p>Is the wetland connected at any time of the year via surface water:</p> <ul style="list-style-type: none"> <li>to a perennial stream or a seasonal stream <u>with</u> fish; ..... Yes=6</li> <li><u>or</u> to a seasonal stream <u>without</u> fish; ..... Yes=4</li> <li><u>or</u> is not connected to any stream?..... Yes=0</li> </ul>	

5h. Buffers.

<p><b>STEP 1</b>                  Estimate (to the nearest 5%) the % of each buffer or land-use type (below) that adjoins the wetland boundary.</p> <p>Then multiply the %/s by the factor(s) below and enter result in column to right:</p>	<p><b>STEP 2</b>                  Multiply result(s) of step 1:                  by 1, if buffer width is 25-50';                  by 2, if buffer width is 50-100';                  by 3, if buffer width is &gt;100'.</p> <p>Enter results below and add subscore:</p>										
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open water or native grasslands:                   %__ x 3 =	__ x __ = __										
forest or shrub:                   %__ x 4 =	__ x __ = __										
Add Buffer total = __											
<p><b>STEP 3.</b> Score points according to table at right :</p> <table style="width:100%; border: none;"> <tr> <td style="text-align: right;"><u>Buffer total</u></td> <td></td> </tr> <tr> <td style="text-align: right;">900-1200...</td> <td>Yes=4</td> </tr> <tr> <td style="text-align: right;">600-899....</td> <td>Yes=3</td> </tr> <tr> <td style="text-align: right;">300-599....</td> <td>Yes=2</td> </tr> <tr> <td style="text-align: right;">100-299....</td> <td>Yes=1</td> </tr> </table>		<u>Buffer total</u>		900-1200...	Yes=4	600-899....	Yes=3	300-599....	Yes=2	100-299....	Yes=1
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<p>5i. <u>Connection to other habitat areas:</u></p> <ul style="list-style-type: none"> <li>- Is there a riparian corridor to other wetlands within 0.25 of a mile, <u>or</u> a corridor &gt; 100' wide with good forest or shrub cover to any other habitat area?..... Yes =6</li> <li>- Is there a narrow corridor &lt; 100' wide with good cover <u>or</u> a wide corridor &gt; 100' wide with low cover to any other habitat area?..... Yes=4</li> <li>- Is there a narrow corridor &lt; 100' wide with low cover <u>or</u> a significant habitat area within 0.25 mile but no corridor?..... Yes=1</li> <li>- Is the wetland and buffer completely isolated by development and or cultivated agricultural land?..... Yes=0</li> </ul>											
<p>NOW: Add the scores circled (for Q.5a - Q.5i above) to get a Total. ....</p> <p>Is the <u>Total</u> greater than or equal to 22 points. ....</p>											
<p>Total = _____                  Yes: Category II                  No: Category III</p>											

## WETLANDS RATING FIELD DATA FORM

**BACKGROUND INFORMATION:**

Name of Rater: Sol Sewell Affiliation: Sewell Wetland Con. Date: 10-22-07

Name of wetland (if known): Wetland C - Palomino

Government Jurisdiction of wetland: \_\_\_\_\_

Location: 1/4 S: \_\_\_\_\_ of 1/4 S: \_\_\_\_\_ SEC: \_\_\_\_\_ TOWNSHIP: \_\_\_\_\_ RANGE: \_\_\_\_\_

**SOURCES OF INFORMATION: (Check all sources that apply)**

Site visit:  USGS Topo Map:  NWI map:  Aerial Photo:  Soils survey:

Other:  Describe: \_\_\_\_\_

WHEN THE FIELD DATA FORM IS COMPLETE ENTER CATEGORY HERE:

3

**Q.1. High Quality Natural Heritage Wetland.**

Circle answers:

Answer this question if you have adequate information or experience to do so. If not find someone with the expertise to answer the questions. Then, if the answer to questions 1a, 1b and 1c are all NO, contact the Natural Heritage program of DNR.

1a. Is there significant evidence of human-caused changes to topography or hydrology of the wetland? Significant changes could include clearing, grading, filling, logging of the wetland or its immediate buffer, or culverts, ditches, dredging, diking or drainage of the wetland. Briefly describe the changes and your information source/s: located in an old excavation

Yes: go to Q.3.  
No: go to 1b.

1b. Are there populations of non-native plants which are currently present and appear to be invading native populations? Briefly describe any non-native plant populations and information source(s): \_\_\_\_\_

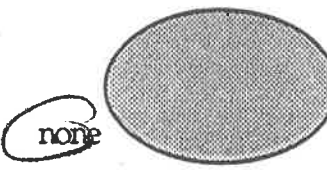
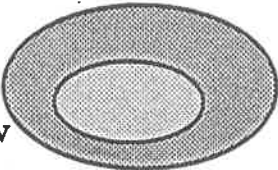
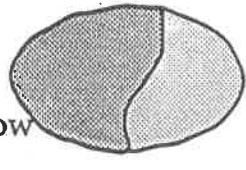
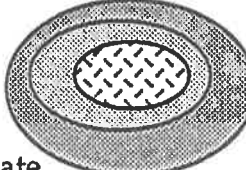
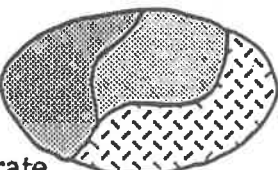
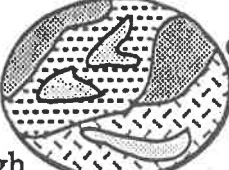
Yes: go to Q.3.  
No: go to 1c.

1c. Is there significant evidence of human-caused disturbance of the water quality of the system? Degradation of water quality could be evidenced by culverts entering the system, direct road/parking lot runoff, evidence of historic dumping of wastes, oily sheens, extreme eutrophic conditions, livestock use or dead fish etc. Briefly describe: \_\_\_\_\_

Yes: go to Q.3.  
No: Possible  
Category I

<p><u>Q.2. Regionally Rare Native Wetland Communities</u></p> <p>The Department of Ecology is developing a methodology for regionally rare native wetland communities. It is not yet available for use.</p>	
<p><u>Q.3. Irreplaceable Ecological Functions:</u></p> <p>Does the wetland:</p> <ul style="list-style-type: none"> <li>- have at a least 1/2 acre of contiguous peat wetland; .....</li> <li>- <u>or</u>, have a forested class greater than 1 acre ; .....</li> </ul>	<p>No to both: go to Q.4.</p> <p>Yes: go to 3a.</p> <p>Yes: go to 3b.</p>
<p><u>Q.3a. Peat Wetlands.</u></p> <p>3a1. Does at least 1/2 acre of the contiguous peat wetland have &lt; 25% areal cover of any combination of species from the list of invasive/exotic species on p.19, <u>and</u> have &lt; 80% areal cover of <i>Spirea douglasii</i>? .....</p>	<p>Yes: Category I No: go to Q.4.</p>
<p><u>Q.3b. Mature forested wetland.</u></p> <p>3b1. Is the average age of dominant trees in the forested wetland &gt; 80 years? .....</p> <p>3b2. Is the average age of dominant trees in the forested wetland 50-80 years, <u>and</u> is the structural diversity high as characterized by a multi-layer community of trees &gt; 50' tall <u>and</u> trees 20'-49' tall <u>and</u> shrubs <u>and</u> herbaceous groundcover? ..</p> <p>3b3. Is &gt; 50% (areal cover) of the dominant plants in one or more layers (canopy, young trees, shrubs, herbs) invasive/exotic plant species from the p.19 list? ..</p>	<p>Yes: Category I No: go to 3b2.</p> <p>Yes: go to 3b3. No: go to Q.5.</p> <p>Yes: go to Q.5. No: Category I.</p>
<p><u>Q.4. Category IV wetlands</u></p> <p>4.1. Is the wetland: less than 1 acre <u>and</u>, hydrologically isolated <u>and</u>, comprised of <u>one</u> vegetated class that is dominated (&gt; 80% areal cover) by <u>one</u> species from the list in guidance p.18. ....</p> <p>4.2. Is the wetland: less than two acres <u>and</u>, hydrologically isolated, with <u>one</u> vegetated class, and &gt; 90% of areal cover is <u>any</u> combination of species from the list in guidance p.19. ....</p>	<p>Yes: Category IV No: go to 4.2.</p> <p>Yes: Category IV No: go to Q.5.</p>

O.5. Significant habitat value. Answer all questions and enter data requested.		Circle scores that qualify																																							
<p>5a. <u>Total wetland area</u></p> <p>Estimate area, select from choices in the near-right column, and score in the far column:</p> <p>Enter acreage of wetland here: _____ acres, and source: _____</p>	<p>acres</p> <p>&gt; 20.00</p> <p>10 - 19.99</p> <p>5 - 9.99</p> <p>1 - 4.99</p> <p>0.1 - 0.99</p> <p>&lt;0.1</p>	<p>Yes=6</p> <p>Yes=5</p> <p>Yes=4</p> <p>Yes=3</p> <p>Yes=2</p> <p>Yes=1</p>																																							
<p>5b. <u>Wetland classes</u>: Circle the wetland classes below that qualify:</p> <p><u>Open Water</u>: if the area of open water is &gt; 1/2 acre or &gt; 10% of the total wetland area. Source: _____</p> <p><u>Aquatic Beds</u>: if the area of aquatic beds &gt; 10% of the <u>open water</u> area or &gt; 1/2 acre.</p> <p><u>Emergent</u>: if the area of emergent class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p><u>Scrub-Shrub</u>: if the area of scrub-shrub class is &gt; 1/2 acre or &gt; 10% of the total wetland area. ✓</p> <p><u>Forested</u>: if area of forested class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p>Add the number of wetland classes, above, that qualify, and then score according to the columns at right.</p> <p>e.g. If there are 4 classes (aquatic beds, open water, emergent &amp; scrub-shrub), you would circle 8 points in the far right column.</p>																																									
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<b>5h. Buffers.</b>											
<p><b>STEP 1</b> Estimate (to the nearest 5%) the % of each buffer or land-use type (below) that adjoins the wetland boundary.</p> <p>Then multiply the %/s by the factor(s) below and enter result in column to right:</p>	<p><b>STEP 2</b> Multiply result(s) of step 1: by 1, if buffer width is 25-50'; by 2, if buffer width is 50-100'; by 3, if buffer width is &gt;100'.</p> <p>Enter results below and add subscore:</p>										
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forest or shrub:                   % ___ x 4 =	___ x ___ = ___										
Add Buffer total = <u>300</u>											
<p><b>STEP 3.</b> Score points according to table at right :</p>	<table style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: right; padding-right: 10px;"><u>Buffer total</u></td> <td></td> </tr> <tr> <td style="text-align: right;">900-1200...</td> <td>Yes=4</td> </tr> <tr> <td style="text-align: right;">600-899....</td> <td>Yes=3</td> </tr> <tr> <td style="text-align: right;"><u>300-599</u>....</td> <td>Yes=2</td> </tr> <tr> <td style="text-align: right;">100-299....</td> <td>Yes=1</td> </tr> </table> <p style="text-align: right; margin-top: 10px;">2</p>	<u>Buffer total</u>		900-1200...	Yes=4	600-899....	Yes=3	<u>300-599</u> ....	Yes=2	100-299....	Yes=1
<u>Buffer total</u>											
900-1200...	Yes=4										
600-899....	Yes=3										
<u>300-599</u> ....	Yes=2										
100-299....	Yes=1										
<b>5i. Connection to other habitat areas:</b>											
<p>- Is there a riparian corridor to other wetlands within 0.25 of a mile, <u>or</u> a corridor &gt; 100' wide with good forest or shrub cover to any other habitat area? .....</p>	<p>Yes=<u>6</u></p>										
<p>- Is there a narrow corridor &lt; 100' wide with good cover <u>or</u> a wide corridor &gt; 100' wide with low cover to any other habitat area? .....</p>	<p>Yes=4</p>										
<p>- Is there a narrow corridor &lt; 100' wide with low cover <u>or</u> a significant habitat area within 0.25 mile but no corridor? .....</p>	<p>Yes=1</p>										
<p>- Is the wetland and buffer completely isolated by development and or cultivated agricultural land? .....</p>	<p>Yes=0</p>										
6											
<p>NOW: Add the scores circled (for Q.5a - Q.5i above) to get a Total. ....</p> <p>Is the <u>Total</u> greater than or equal to 22 points. ....</p>	<p>Total = <u>12</u></p> <p>Yes: Category II</p> <p>No: Category III</p>										

## WETLANDS RATING FIELD DATA FORM

**BACKGROUND INFORMATION:**

Name of Rater: Ed Semel Affiliation: Small Wetland Cons. Date: 10-22-07

Name of wetland (if known): Wetland D - Palomares

Government Jurisdiction of wetland: Kittitas Co

Location: 1/4 S: \_\_\_\_\_ of 1/4 S: \_\_\_\_\_ SEC: \_\_\_\_\_ TOWNSHIP: \_\_\_\_\_ RANGE: \_\_\_\_\_

**SOURCES OF INFORMATION: (Check all sources that apply)**

Site visit:  USGS Topo Map:  NWI map:  Aerial Photo:  Soils survey:

Other:  Describe: \_\_\_\_\_

WHEN THE FIELD DATA FORM IS COMPLETE ENTER CATEGORY HERE:

4

**Q.1. High Quality Natural Heritage Wetland.**

Circle answers:

Answer this question if you have adequate information or experience to do so. If not find someone with the expertise to answer the questions. Then, if the answer to questions 1a, 1b and 1c are all NO, contact the Natural Heritage program of DNR.

1a. Is there significant evidence of human-caused changes to topography or hydrology of the wetland? Significant changes could include clearing, grading, filling, logging of the wetland or its immediate buffer, or culverts, ditches, dredging, diking or drainage of the wetland. Briefly describe the changes and your information source/s: Fenced timothy field w/ tile drainage

Yes: go to Q.3.  
No: go to 1b.

1b. Are there populations of non-native plants which are currently present and appear to be invading native populations? Briefly describe any non-native plant populations and information source(s): \_\_\_\_\_

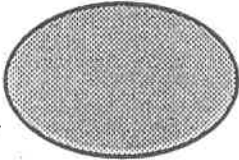
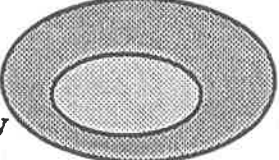
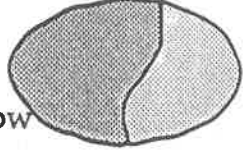
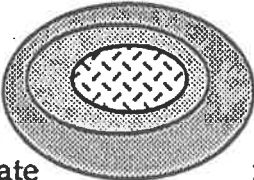
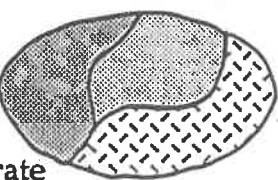
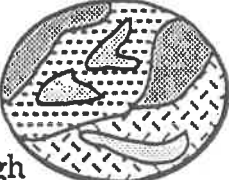
Yes: go to Q.3.  
No: go to 1c.

1c. Is there significant evidence of human-caused disturbance of the water quality of the system? Degradation of water quality could be evidenced by culverts entering the system, direct road/parking lot runoff, evidence of historic dumping of wastes, oily sheens, extreme eutrophic conditions, livestock use or dead fish etc. Briefly describe: \_\_\_\_\_

Yes: go to Q.3.  
No: Possible Category I

<p><b>Q.2. Regionally Rare Native Wetland Communities</b></p> <p>The Department of Ecology is developing a methodology for regionally rare native wetland communities. It is not yet available for use.</p>	
<p><b>Q.3. Irreplaceable Ecological Functions:</b></p> <p>Does the wetland:</p> <ul style="list-style-type: none"> <li>- have at least 1/2 acre of contiguous peat wetland;.....</li> <li>- <u>or</u>, have a forested class greater than 1 acre ; .....</li> </ul>	<p>No to both go to Q.4.</p> <p>Yes: go to 3a.</p> <p>Yes: go to 3b.</p>
<p><b>Q.3a. Peat Wetlands.</b></p> <p>3a1. Does at least 1/2 acre of the contiguous peat wetland have &lt; 25% areal cover of any combination of species from the list of invasive/exotic species on p.19, <u>and</u> have &lt; 80% areal cover of <i>Spirea douglasii</i>? .....</p>	<p>Yes: Category I</p> <p>No: go to Q.4.</p>
<p><b>Q.3b. Mature forested wetland.</b></p> <p>3b1. Is the average age of dominant trees in the forested wetland &gt; 80 years? .....</p> <p>3b2. Is the average age of dominant trees in the forested wetland 50-80 years, <u>and</u> is the structural diversity high as characterized by a multi-layer community of trees &gt; 50' tall <u>and</u> trees 20'-49' tall <u>and</u> shrubs <u>and</u> herbaceous groundcover? ..</p> <p>3b3. Is &gt; 50% (areal cover) of the dominant plants in one or more layers (canopy, young trees, shrubs, herbs) invasive/exotic plant species from the p.19 list?..</p>	<p>Yes: Category I</p> <p>No: go to 3b2.</p> <p>Yes: go to 3b3.</p> <p>No: go to Q.5.</p> <p>Yes: go to Q.5.</p> <p>No: Category I.</p>
<p><b>Q.4. Category IV wetlands</b></p> <p>4.1. Is the wetland: less than 1 acre <u>and</u>, hydrologically isolated <u>and</u>, comprised of <u>one</u> vegetated class that is dominated (&gt; 80% areal cover) by <u>one</u> species from the list in guidance p.18. ....</p> <p>4.2. Is the wetland: less than two acres <u>and</u>, hydrologically isolated, with <u>one</u> vegetated class, and &gt; 90% of areal cover is <u>any</u> combination of species from the list in guidance p.19. ....</p>	<p>Yes: Category IV</p> <p>No: go to 4.2*</p> <p>Yes: Category IV</p> <p>No: go to Q.5.</p>

Q.5. Significant habitat value. Answer all questions and enter data requested.		Circle scores that qualify																																							
<p>5a. <u>Total wetland area</u></p> <p>Estimate area, select from choices in the near-right column, and score in the far column:</p> <p>Enter acreage of wetland here: _____ acres, and source: _____</p>	<p>acres</p> <p>&gt; 20.00</p> <p>10 - 19.99</p> <p>5 - 9.99</p> <p>1 - 4.99</p> <p>0.1 - 0.99</p> <p>&lt;0.1</p>	<p>Yes=6</p> <p>Yes=5</p> <p>Yes=4</p> <p>Yes=3</p> <p>Yes=2</p> <p>Yes=1</p>																																							
<p>5b. <u>Wetland classes</u>: Circle the wetland classes below that qualify:</p> <p><u>Open Water</u>: if the area of open water is &gt; 1/2 acre or &gt; 10% of the total wetland area. Source: _____</p> <p><u>Aquatic Beds</u>: if the area of aquatic beds &gt; 10% of the <u>open water</u> area or &gt; 1/2 acre.</p> <p><u>Emergent</u>: if the area of emergent class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p><u>Scrub-Shrub</u>: if the area of scrub-shrub class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p><u>Forested</u>: if area of forested class is &gt; 1/2 acre or &gt; 10% of the total wetland area.</p> <p>Add the number of wetland classes, above, that qualify, and then score according to the columns at right.</p> <p>e.g. If there are 4 classes (aquatic beds, open water, emergent &amp; scrub-shrub), you would circle 8 points in the far right column.</p>																																									
	<p><u># of classes</u></p> <p>1.....</p> <p>2.....</p> <p>3.....</p> <p>4.....</p> <p>5.....</p>	<p>Yes =1</p> <p>Yes =3</p> <p>Yes =5</p> <p>Yes =8</p> <p>Yes =11</p>																																							
<p>5c. <u>Plant species diversity</u>.</p> <p>For all wetland classes (at right) that qualify in 5b. above, count the number of different plant species you can find. You do not have to name them.</p> <p>Score in column at far right:</p> <p>e.g. If a wetland has an aquatic bed class with 3 species, an emergent class with 4 species and a scrub-shrub class with 2 species you would circle 2, 2, and 1 in the far column.</p>	<table border="1"> <thead> <tr> <th>Class</th> <th># of species</th> <th></th> </tr> </thead> <tbody> <tr> <td><u>Aquatic Bed</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>"</td> <td>3...</td> <td>Yes=2</td> </tr> <tr> <td>"</td> <td>&gt;3...</td> <td>Yes=3</td> </tr> <tr> <td><u>Emergent</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>"</td> <td>3-4...</td> <td>Yes=2</td> </tr> <tr> <td>"</td> <td>&gt;4...</td> <td>Yes=3</td> </tr> <tr> <td><u>Scrub-Shrub</u></td> <td>1-2...</td> <td>Yes=1</td> </tr> <tr> <td>"</td> <td>3-4...</td> <td>Yes=2</td> </tr> <tr> <td>"</td> <td>&gt;4...</td> <td>Yes=3</td> </tr> <tr> <td><u>Forested</u></td> <td>1...</td> <td>Yes=1</td> </tr> <tr> <td>"</td> <td>2...</td> <td>Yes=2</td> </tr> <tr> <td>"</td> <td>&gt;2...</td> <td>Yes=3</td> </tr> </tbody> </table>	Class	# of species		<u>Aquatic Bed</u>	1-2...	Yes=1	"	3...	Yes=2	"	>3...	Yes=3	<u>Emergent</u>	1-2...	Yes=1	"	3-4...	Yes=2	"	>4...	Yes=3	<u>Scrub-Shrub</u>	1-2...	Yes=1	"	3-4...	Yes=2	"	>4...	Yes=3	<u>Forested</u>	1...	Yes=1	"	2...	Yes=2	"	>2...	Yes=3	
Class	# of species																																								
<u>Aquatic Bed</u>	1-2...	Yes=1																																							
"	3...	Yes=2																																							
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<u>Emergent</u>	1-2...	Yes=1																																							
"	3-4...	Yes=2																																							
"	>4...	Yes=3																																							
<u>Scrub-Shrub</u>	1-2...	Yes=1																																							
"	3-4...	Yes=2																																							
"	>4...	Yes=3																																							
<u>Forested</u>	1...	Yes=1																																							
"	2...	Yes=2																																							
"	>2...	Yes=3																																							

<p>5d. <u>Structural diversity.</u>          If the wetland has a forested class, add 1 point for each of the following:</p> <ul style="list-style-type: none"> <li>-trees &gt; 50' tall .....</li> <li>-trees 20'- 49' tall .....</li> <li>-shrubs .....</li> <li>-herbaceous ground cover .....</li> </ul>	<p>Yes=1          Yes=1          Yes=1          Yes=1</p>
<p>5e. Decide from the diagrams below whether <u>interspersion between wetland classes</u> is high, moderate, low or none?</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>none</p>  </div> <div style="text-align: center;"> <p>low</p>  </div> <div style="text-align: center;"> <p>low</p>  </div> <div style="text-align: center;"> <p>moderate</p>  </div> <div style="text-align: center;"> <p>moderate</p>  </div> <div style="text-align: center;"> <p>high</p>  </div> </div>	<p>High=3          Moderate=2          Low=1          None=0</p>
<p>5f. <u>Habitat features.</u></p> <p>Answer questions below, circle features that apply, and score to right:</p> <p>Is there evidence of current use by beavers ? .....</p> <p>Is a heron rookery located within 300'? .....</p> <p>Are raptor nest/s located within 300'? .....</p> <p>Are there at least 3 standing dead trees (snags) per acre? .....</p> <p>Are any of these standing dead trees (snags) &gt; 10" in diameter? .....</p> <p>Are there any other perches (wires, poles or posts)? .....</p> <p>Are there at least 3 downed logs per acre? .....</p>	<p>Yes=3          Yes=2          Yes=1          Yes=1          Yes=1          Yes=1          Yes=1</p>
<p>5g. <u>Connection to streams.</u> (Score one answer only.)</p> <p>Is the wetland connected at any time of the year via surface water:</p> <ul style="list-style-type: none"> <li>to a perennial stream or a seasonal stream <u>with</u> fish; .....</li> <li><u>or</u>, to a seasonal stream <u>without</u> fish; .....</li> <li><u>or</u>, is not connected to any stream? .....</li> </ul>	<p>Yes=6          Yes=4          Yes=0</p>

5h. Buffers.

**STEP 1**

Estimate (to the nearest 5%) the % of each buffer or land-use type (below) that adjoins the wetland boundary.

Then multiply the %/s by the factor(s) below and enter result in column to right:

**STEP 2**

Multiply result(s) of step 1:  
by 1, if buffer width is 25-50';  
by 2, if buffer width is 50-100';  
by 3, if buffer width is >100'.

Enter results below and add subscore:

roads, buildings or parking lots:

%      x 0 =

0

lawn, grazed pasture, vineyards or annual crops:

%      x 1 =

     x      =     

ungrazed grassland or orchards:

%      x 2 =

     x      =     

open water or native grasslands:

%      x 3 =

     x      =     

forest or shrub:

%      x 4 =

     x      =     

Add Buffer total =     

**STEP 3.** Score points according to table at right :

Buffer total

900-1200...	Yes=4
600-899....	Yes=3
300-599....	Yes=2
100-299....	Yes=1

5i. Connection to other habitat areas:

- Is there a riparian corridor to other wetlands within 0.25 of a mile, or a corridor > 100' wide with good forest or shrub cover to any other habitat area?..... Yes=6
- Is there a narrow corridor < 100' wide with good cover or a wide corridor > 100' wide with low cover to any other habitat area?..... Yes=4
- Is there a narrow corridor < 100' wide with low cover or a significant habitat area within 0.25 mile but no corridor?..... Yes=1
- Is the wetland and buffer completely isolated by development and or cultivated agricultural land?..... Yes=0

NOW: Add the scores circled (for Q.5a - Q.5i above) to get a Total. ....  
Is the Total greater than or equal to 22 points. ....

Total =           
Yes: Category II  
No: Category III

**WETLAND RATING FORM - EASTERN WASHINGTON**

Wetland Name: wetland A Date: 9-17-08  
 Name of wetland (if known): Palomares Fields  
 Location: SEC: 27 TWSHP: 18 RANGE: 18E (attach map with outline of wetland to rating form)  
 Person(s) Rating Wetland: Ed Sewd Affiliation: \_\_\_\_\_ Date of site visit: 7/6/07

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland

I \_\_\_ II \_\_\_ III \_\_\_ IV \_\_\_

Category I = Score > 70  
 Category II = Score 51-69  
 Category III = Score 30-50  
 Category IV = Score < 30

Score for "Water Quality" Functions  
 Score for Hydrologic Functions  
 Score for Habitat Functions  
 TOTAL score for functions

9
4
8
21

Category based on SPECIAL CHARACTERISTICS of wetland

I \_\_\_ II \_\_\_ III \_\_\_ Does not Apply \_\_\_

Final Category (choose the "highest" category from above)

**IV**

Check the appropriate type and class of wetland being rated.

Wetland Type	Wetland Class
Vernal Pool	Depressional
Alkali	Riverine
Natural Heritage Wetland	Lake-fringe
Bog	Slope
Forest	
None of the above	

Does the wetland being rated meet any of the criteria below?  
 If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
A1. Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		<input checked="" type="checkbox"/>
A2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		<input checked="" type="checkbox"/>
A3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		<input checked="" type="checkbox"/>
A4. Does the wetland have a local significance in addition to its functions. For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		<input checked="" type="checkbox"/>

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Classification of Vegetated Wetlands for Eastern Washington

Wetland Name: \_\_\_\_\_ Date: \_\_\_\_\_

- Does the wetland meet both of the following criteria?  
 The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);  
 At least 30% of the open water area is deeper than 3 m (10 ft)?  
NO - go to Step 2 YES - The wetland class is **Lake-fringe (lacustrine fringe)**
- Does the wetland meet all of the following criteria?  
 The wetland is on a slope (slope can be very gradual);  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.  
 The water leaves the wetland without being impounded?  
 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 a foot deep).  
NO - go to Step 3 YES - The wetland class is **Slope**
- Is the wetland in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." The wetland can contain depressions that are filled with water when the river is not flooding.  
NO - go to Step 4 YES - The wetland class is **Riverine**
- Is the wetland in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present, is higher than the interior of the wetland.  
YES - The wetland class is Depressional  
 NO - go to Step 5

5. Your wetland seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. If you have a wetland with several HGM classes present within its boundaries use the following table to identify the appropriate class to use for the rating system. 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 being rated.

HGM Classes Within One Delineated Wetland Boundary	Class to Use in Rating if area of this class > 10% total
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional

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

D Depressional Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality		
D	D 1.0 Does the wetland have the potential to improve water quality? (see p. 32 in text)	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland has no surface water outlet - points = 5 Wetland has an intermittently flowing, or highly constricted, outlet - points = 3 Wetland has a permanently flowing surface outlet - points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES points = 3 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest): 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	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 > 1/2 total area of wetland points = 3 Area seasonally ponded is 1/4 - 1/2 total area of wetland points = 1 Area seasonally ponded is < 1/4 total area of wetland points = 0 NOTE: See text for indicators of seasonal and permanent inundation/flooding.	1
D	Total for D 1 Add the points in the boxes above	9
D	D 2.0 Does the wetland have the opportunity to improve water quality? (see p. 38) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. <ul style="list-style-type: none"> <li>Grazing in the wetland or within 150ft</li> <li>Wetland intercepts groundwater within the Reclamation Area</li> <li>Untreated stormwater flows into wetland</li> <li>Tilled fields or orchards within 150 feet of wetland</li> <li>Water from a stream or culvert flows into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Other</li> </ul> YES multiplier is 2 NO multiplier is 1	multiplier 0
D	TOTAL - Water Quality Functions Multiply the score from D1 by the multiplier in D2 Record score on p. 1 of field form	9

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D Depressional Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
D	D 3.0 Does the wetland have the potential to reduce flooding and stream erosion? (see p. 39)	4
D	D 3.1 Characteristics of surface water flows out of the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing, or highly constricted, outlet Wetland has a permanently flowing surface outlet	points = 8 points = 6 points = 0
D	D 3.2 Depth of storage during wet periods: Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water Marks of ponding are at least 3 ft above the surface The wetland is a "headwater" wetland" (see p. 39) Marks are 2 ft to < 3 ft from surface Marks are 1 ft to < 2 ft from surface Marks are 6 in to < 1 ft from surface No marks above 6 in. or wetland has only saturated soils	points = 8 points = 6 points = 6 points = 4 points = 2 points = 0
D	Total for D 3 Add the points in the boxes above	4
D	D 4.0 Does the wetland have the opportunity to reduce flooding and erosion? (see p. 42) Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other	multiplier 1
D	TOTAL - Hydrologic Functions Multiply the score from D3 by the multiplier in D4 in D4 Record score on p. 1 of field form	4
Comments		

R Riverine Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality		
R	R 1.0 Does the wetland have the potential to improve water quality? (see p. 45)	4
R	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 Depressions cover > 1/10 area of wetland Depressions present but cover < 1/10 area of wetland No depressions present	points = 6 points = 3 points = 1 points = 0
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland Forest or shrub 1/3 - 2/3 area of the wetland Ungrazed, emergent plants > 2/3 area of wetland Ungrazed emergent plants 1/3 - 2/3 area of wetland Forest, shrub, and ungrazed emergent < 1/3 area of wetland	points = 10 points = 5 points = 5 points = 2 points = 0
R	Total for R1 Add the points in the boxes above	4
R	R 2.0 Does the wetland have the opportunity to improve water quality? (see p. 46) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. — Grazing in the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Untreated stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other	multiplier 1
R	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2 Record score on p. 1 of field form	4
Comments		

S Slope Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
S	S 3.0 Does the wetland have the potential to reduce flooding and stream erosion? (see p.59)	
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. Dense, uncut, rigid vegetation covers > 90% of the area of the wetland (stems of plants should be thick enough (usually > 1/8 in) or dense enough, to remain erect during surface flows) points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of wetland points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 area points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	Total for S3 Add the points in the boxes above	
S	S 4.0 Does the wetland have the opportunity to reduce flooding and erosion? (see p.61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field). Answer YES if the wetland is in a landscape position where the reduction in water velocity provides help protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. — Wetland has surface runoff that can cause flooding problems downgradient — Other YES multiplier is 2 NO multiplier is 1	multiplier
S	TOTAL - Hydrologic Functions Multiply the score from S3 by the multiplier in S4 Record score on p. 1 of field form	
Comments		

Habitat Functions		Points
HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat		
H 1. Does the wetland have the potential to provide habitat for many species? Check the types of vegetation present if the type covers more than 10% of the area of the wetland or 1/4 acre.		
H 1.1	Vegetation structure (see p.62) Aquatic bed Emergent plants 0-12 inches high (0 - 30 cm) Emergent plants > 12 - 40 inches high (>30 - 100cm) Emergent plants > 40 inches high (> 100 cm) Scrub/shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) Add the number of vegetation types that qualify. If you have: 4-6 types record points = 3 3 types points = 2 2 types points = 1 1 type points = 0	0
H 1.2	Is one of the vegetation types "aquatic bed"? (see p. 64) YES = 1 point NO = 0 points	0
H 1.3	Surface Water (see p.65) H 1.3.1 Does the wetland have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March - early June) OR in early fall (August - 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 wetland have an intermittent-permanent stream within its boundaries, or along one side, that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? YES = 3 points NO = 0 points	0
H 1.4	Richness of Plant Species (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: > 9 species points = 2 4-9 species points = 1 < 4 species points = 0 points	1

<p><b>H 2.0 Does the wetland have the opportunity to provide habitat for many species?</b></p> <p><b>H 2.1 Buffers</b> (see p. 71) Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <ul style="list-style-type: none"> <li>— 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</li> <li>— 330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>— 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>— 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference. Points = 3</li> <li>— 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</li> </ul> <p>If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> <li>— No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>— No paved areas or buildings within 170ft (50m) of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>— Heavy grazing in buffer. Points = 1</li> <li>— Vegetated buffers are &lt;6.6ft wide (2m) for more than 95% of the circumference (e.g. filled fields, paving, basalt bedrock extend to edge of wetland). Points = 0</li> <li>— Buffer does not meet any of the criteria above. Points = 1</li> </ul>	<p><b>H 2.2 Wet Corridors</b> (see p. 72)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor at least 1/4 mile long with surface water or flowing water throughout most of the year (&gt; 9 months/yr)? (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). YES = 4 points (go to H 2.2.3) NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO go to H 2.2.3</p> <p>H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (do not include man-made ditches)? YES = 1 point NO = 0 points</p>
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<p><b>H 1.5. Interspersion of habitats</b> (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>None = 0 points</p> </div> <div style="text-align: center;"> <p>Low = 1 point</p> </div> <div style="text-align: center;"> <p>Moderate = 2 points</p> </div> <div style="text-align: center;"> <p>High = 3 points</p> </div> </div> <p>[Riparian braided channel]</p> <p>NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".</p>	<p><b>H 1.6. Special Habitat Features</b> (see p. 68) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <li>___ Loose rocks larger than 4" or large, downed, woody debris (&gt;4in. diameter) within the area of surface ponding or in stream.</li> <li><input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.</li> <li>___ Standing snags (diameter at the bottom &gt; 4 inches) in the wetland or within 30 m (100 ft) of the edge.</li> <li>___ Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.</li> <li>___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt;45 degree slope) OR signs of recent beaver activity</li> <li>___ Invasive species cover less than 20% in each stratum of vegetation</li> </ul> <p>Maximum score possible = 6</p> <p><b>TOTAL Potential to provide habitat</b> Add the scores in the column above</p>
<p>Comments</p>	<p>1</p> <p>2</p>

**H 2.3** Near or adjacent to other priority habitats listed by WDFW (see p. 74) which of the following priority habitats are within 330ft (100m) of the wetland? (see text for a more detailed description of these priority habitats)

\_\_\_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

\_\_\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 2 acres.

\_\_\_\_\_ **Cliffs:** Greater than 25 ft high and occurring below 5000 ft.

\_\_\_\_\_ **Old-growth forests:** (east of Cascade crest): In general, stands will be >150 years of age, with 10 trees/acre that are > 21 in dbh, and 1 - 3 snags/acre > 12-14 in diameter.

\_\_\_\_\_ **Mature forests:** Stands with average diameters exceeding 21 in dbh; crown cover may be less than 100%; decay, 80 - 160 years old east of the Cascade crest.

\_\_\_\_\_ **Prairies and Steppe:** Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.

\_\_\_\_\_ **Shrub-steppe:** Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs.

\_\_\_\_\_ **Talus:** Homogeneous areas of rock rubble ranging in average size 0.5 - 6.5 ft, composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

\_\_\_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages

\_\_\_\_\_ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.

\_\_\_\_\_ **Urban Natural Open Space:** A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other priority habitats, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.

\_\_\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.8 ha (2 acres).

If wetland has 2 or more Priority Habitats = 4 points  
 If wetland has 1 Priority Habitat = 2 points  
 No Priority habitats = 0 points

**Comments**

**H 2.4 Landscape.** (choose the one description of the landscape around the wetland that best fits) (see p. 76)

\_\_\_\_\_ The wetland 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)

\_\_\_\_\_ There are at least 3 other wetlands within 1/4 mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development).

✓ There are at least 3 other wetlands within 1/4 mile, BUT the connections between them are disturbed?

\_\_\_\_\_ There is at least 1 wetland within 1/2 mile.

\_\_\_\_\_ Does not meet any of the four criteria above

points = 5  
 points = 2  
 points = 1  
 points = 0

**H 2. TOTAL Score - opportunity for providing habitat**  
 Add the scores in the column above

**H 3.0 Does the wetland have indicators that its ability to provide habitat is reduced?**

**H 3.1 Indicator of reduced habitat functions (see p. 75)**  
 Do the areas of open water in the wetland have a resident population of carp (see text for indicators of the presence of carp)? (NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)

YES = - 5 points  
 NO = 0 points

**Total Score for Habitat Functions - add the points for H 1, H 2, and H 3 and record the result on p. 1**

**Comments**

**WETLAND RATING FORM – EASTERN WASHINGTON**

Wetland Name: Wetland B Date: 9-17-08  
 Name of wetland (if known): Palomine Fields  
 Location: SEC.      TOWNSHIP: Ed Sam (attach map with outline of wetland to rating form) Date of site visit: 4/07-10/07  
 Person(s) Rating Wetland: Ed Sam Affiliation:     

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland

I      II      III      IV     

Category I = Score >70	24
Category II = Score 51-69	7
Category III = Score 30-50	20
Category IV = Score < 30	
<b>TOTAL score for functions</b>	

Category based on SPECIAL CHARACTERISTICS of wetland

I      II      III      Does not Apply     

**IV**

**Final Category** (choose the "highest" category from above)

Check the appropriate type and class of wetland being rated.

Wetland Type	Wetland Class
Vernal Pool	Depressional
Alkali	Riverine
Natural Heritage Wetland	Lake-fringe
Bog	Slope
Forest	<input checked="" type="checkbox"/>
None of the above	

**Does the wetland being rated meet any of the criteria below?**

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
A1. Has the wetland been documented as a habitat for any Federally-listed Threatened or Endangered plant or animal species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		<input checked="" type="checkbox"/>
A2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		<input checked="" type="checkbox"/>
A3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		<input checked="" type="checkbox"/>
A4. Does the wetland have a local significance in addition to its functions. For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinances, or in a local management plan as having special significance.		<input checked="" type="checkbox"/>

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

## Classification of Vegetated Wetlands for Eastern Washington

Wetland Name: Wet B Date: \_\_\_\_\_

1. Does the wetland meet both of the following criteria?  
 The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);  
 At least 30% of the open water area is deeper than 3 m (10 ft)?

YES - The wetland class is Lake-fringe (lacustrine fringe)  
 NO - go to Step 2

2. Does the wetland meet all of the following criteria?  
 The wetland is on a slope (slope can be very gradual);  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

The water leaves the wetland without being impounded?  
 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 a foot deep).  
 YES - The wetland class is Slope  
 NO - go to Step 3

3. Is the wetland in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." The wetland can contain depressions that are filled with water when the river is not flooding.  
 YES - The wetland class is Riverine  
 NO - go to Step 4

4. Is the wetland in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present, is higher than the interior of the wetland.  
 YES - The wetland class is Depressional  
 NO - go to Step 5

5. Your wetland seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. If you have a wetland with several HGM classes present within its boundaries use the following table to identify the appropriate class to use for the rating system. 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 being rated.

HGM Class Within One Delineated Wetland Boundary	Class to Use in Rating if Area of this class > 10% total
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional

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

D Depressional Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality		
D	D 1.0 Does the wetland have the potential to improve water quality? (see p. 32 in text)	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland has no surface water outlet - points = 5 Wetland has an intermittently flowing, or highly constricted, outlet points = 3 Wetland has a permanently flowing surface outlet - points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES NO	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest): Wetland has persistent, ungrazed, vegetation for > 2/3 of area points = 3 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	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 > 1/2 total area of wetland points = 3 Area seasonally ponded is 1/2 - 1/4 total area of wetland points = 1 Area seasonally ponded is < 1/4 total area of wetland points = 0 NOTE: See text for indicators of seasonal and permanent inundation/flooding.	1
D	Total for D 1 Add the points in the boxes above	9
D	D 2.0 Does the wetland have the opportunity to improve water quality? (see p. 36) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. <ul style="list-style-type: none"> <li>— Grazing in the wetland or within 150ft</li> <li>— Wetland intercepts groundwater within the Reclamation Area</li> <li>— Untreated stormwater flows into wetland</li> <li>— Tilled fields or orchards within 150 feet of wetland</li> <li>— Water from a stream or culvert flows into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>— Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>— Other</li> </ul> YES multiplier is 2 NO multiplier is 1	multiplier
D	TOTAL - Water Quality Functions Multiply the score from D1 by the multiplier in D2 Record score on p. 1 of field form	9

D Depressional Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
D	D 3.0 Does the wetland have the potential to reduce flooding and stream erosion? (see p. 39)	
D	D 3.1 Characteristics of surface water flows out of the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing, or highly constricted, outlet Wetland has a permanently flowing surface outlet	points = 8 points = 3 points = 0
D	D 3.2 Depth of storage during wet periods: Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water Marks of ponding are at least 3 ft above the surface The wetland is a "headwater" wetland" (see p. 39) Marks are 2 ft to < 3 ft from surface Marks are 1 ft to < 2 ft from surface Marks are 6 in to < 1 ft from surface No marks above 6 in. or wetland has only saturated soils	points = 8 points = 6 points = 6 points = 4 points = 2 points = 0
D	Total for D 3	4
D	D 4.0 Does the wetland have the opportunity to reduce flooding and erosion? (see p. 42) Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other YES multiplier is 2 NO multiplier is 1	multiplier 1
D	TOTAL - Hydrologic Functions	Multiply the score from D3 by the multiplier in D4 in D4 Record score on p. 1 of field form
Comments		

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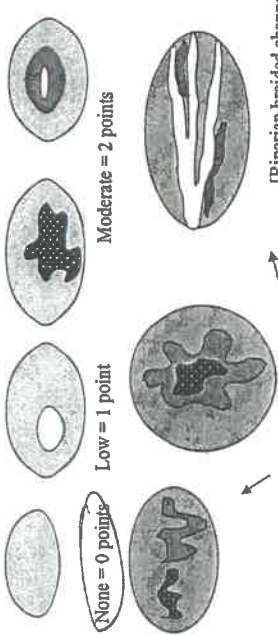
R Riverine Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality (see p. 45)		
R	R 1.0 Does the wetland have the potential to improve water quality? (see p. 45)	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments 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	
R	R 1.2 Characteristics of the vegetation in the wetland: 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, emergent plants > 2/3 area of wetland points = 5 Ungrazed emergent plants 1/3 - 2/3 area of wetland points = 2 Forest, shrub, and ungrazed emergent < 1/3 area of wetland points = 0	
R	Total for R1	0
R	R 2.0 Does the wetland have the opportunity to improve water quality? (see p. 46) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. — Grazing by the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Unretained stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other YES multiplier is 2 NO multiplier is 1	multiplier
R	TOTAL - Water Quality Functions	Multiply the score from R1 by the multiplier in R2 Record score on p. 1 of field form
Comments		

Slope Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
S	S 3.0 Does the wetland have the potential to reduce flooding and stream erosion? (see p. 59)	
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of wetland points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 area points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	Total for S3 Add the points in the boxes above	
S	S 4.0 Does the wetland have the opportunity to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field). Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. - Wetland has surface runoff that can cause flooding problems downgradient Other YES multiplier is 2 NO multiplier is 1	multiplier
S	TOTAL - Hydrologic Functions Multiply the score from S3 by the multiplier in S4 Record score on p. 1 of field form	
Comments		

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Habitat Wetlands		Points
These questions apply to wetlands of all HGM classes.		
HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat		
H 1.	Does the wetland have the potential to provide habitat for many species? Check the types of vegetation present if the type covers more than 10% of the area of the wetland or 1/4 acre.	
H 1.1	Vegetation structure (see p. 62) Aquatic bed Emergent plants 0-12 inches high (0 - 30 cm) Emergent plants > 12 - 40 inches high (>30 - 100cm) Emergent plants > 40 inches high (> 100 cm) Scrub/shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) Add the number of vegetation types that qualify. If you have: 4-6 types record points = 3 3 types points = 2 2 types points = 1 1 type points = 0	1
H 1.2	Is one of the vegetation types "aquatic bed?" (see p. 64) YES = 1 point NO = 0 points	0
H 1.3	Surface Water (see p. 65) H 1.3.1 Does the wetland have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March - early June) OR in early fall (August - 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 wetland have an intermittent or permanent stream within its boundaries, or along one side, that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? YES = 3 points NO = 0 points	0
H 1.4	Richness of Plant Species (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: > 9 species points = 2 4-9 species points = 1 < 4 species points = 0	1



<p>H 1.5. Interspersion of habitats. (see p. 67) Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.</p>  <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [Riparian braided channel]</p> <p>NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".</p>	<p>H 1.6. Special Habitat Features. (see p. 68) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p>Loose rocks larger than 4" or large, downed, woody debris (&gt;4in. diameter) within the area of surface ponding or in stream. <input checked="" type="checkbox"/></p> <p>Cattails or butrushes are present within the wetland. <input type="checkbox"/></p> <p>Standing snags (diameter at the bottom &gt; 4 inches) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/></p> <p>Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded. <input type="checkbox"/></p> <p>Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt;45 degree slope) OR signs of recent beaver activity <input type="checkbox"/></p> <p>Invasive species cover less than 20% in each stratum of vegetation <input type="checkbox"/></p> <p>Maximum score possible = 6</p> <p>TOTAL Potential to provide habitat Add the scores in the column above</p> <p>1</p>
<p>H 2.0 Does the wetland have the opportunity to provide habitat for many species?</p> <p>H 2.1 Buffers (see p. 71) Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <ul style="list-style-type: none"> <li>330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</li> <li>330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference. Points = 3</li> <li>170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</li> </ul> <p>If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> <li>No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>No paved areas or buildings within 170ft (50m) of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>Heavy grazing in buffer. Points = 1</li> <li>Vegetated buffers are &lt;6.6ft wide (2m) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland). Points = 0</li> <li>Buffer does not meet any of the criteria above. Points = 1</li> </ul>	<p>H 2.2 Wet Corridors (see p. 72)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor at least 1/4 mile long with surface water or flowing water throughout most of the year (&gt; 9 months/yr)? (dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken, vegetated corridor at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO go to H 2.2.3</p> <p>H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (do not include man-made ditches)? YES = 1 point NO = 0 points</p>
<p>Comments</p>	<p>14</p>

5

<p>H 2.4 Landscape. (choose the one description of the landscape around the wetland that best fits) (see p. 76)</p> <ul style="list-style-type: none"> <li>— The wetland 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 = 5</li> <li>— There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development). points = 5</li> <li>— There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed? points = 2</li> <li>— There is at least 1 wetland within 1/2 mile. points = 1</li> <li>— Does not meet any of the four criteria above points = 0</li> </ul>	<p style="text-align: center;">2</p>
<p style="text-align: center;">H 2. TOTAL Score - opportunity for providing habitat Add the scores in the column above</p>	
<p>H 3.0 Does the wetland have indicators that its ability to provide habitat is reduced? H 3.1 Indicator of reduced habitat functions (see p. 75)</p> <p>Do the areas of open water in the wetland have a resident population of carp (see text for indicators of the presence of carp)? (NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)</p> <p style="text-align: center;">YES = - 5 points NO = 0 points</p>	
<p style="text-align: center;">Total Score for Habitat Functions - add the points for H 1, H 2, and H 3 and record the result on p. 1</p> <p style="text-align: center;">7</p>	
<p style="text-align: center;">Points will be subtracted</p>	
<p style="text-align: center;">7</p>	

5

<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 74) Which of the following priority habitats are within 330ft (100m) of the wetland? (see text for a more detailed description of these priority habitats)</p> <ul style="list-style-type: none"> <li>— Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. &gt; 330</li> <li>— Aspen Stands: Pure or mixed stands of aspen greater than 2 acres.</li> <li>— Cliffs: Greater than 25 ft high and occurring below 5000 ft.</li> <li>— Old-growth forests: (east of Cascade crest): In general, stands will be &gt;150 years of age, with 10 trees/acre that are &gt; 21 in dbh, and 1 - 3 snags/acre &gt; 12-14 in diameter.</li> <li>— Mature forests: Stands with average diameters exceeding 21 in dbh; crown cover may be less than 100%; decay, 80 - 160 years old east of the Cascade crest.</li> <li>— Prairies and Steppe: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</li> <li>— Shrub-steppe: Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs.</li> <li>— Talus: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft. composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</li> <li>— Caves: A naturally occurring cavity, recess, void, or system of interconnected passages</li> <li>— Oregon white Oak: Woodlands Stands of pure oak or oak/ponderosa associations where canopy coverage of the oak component of the stand is 25%.</li> <li>— Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other priority habitats, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</li> <li>— Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</li> </ul> <p>If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points</p>	<p style="text-align: center;">0</p>
<p style="text-align: center;">Comments</p>	

00295

**WETLAND RATING FORM - EASTERN WASHINGTON**

Wetland Name: Wetland C Date: 9-17-08

Name of wetland (if known): Palomine Fields

Location: SEC: 27 TWSHP: 18 RANGE: 18E (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: \_\_\_\_\_ Affiliation: \_\_\_\_\_ Date of site visit: \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland

I \_\_\_ II \_\_\_ III \_\_\_ IV \_\_\_

Category I = Score > 70	11
Category II = Score 51-69	12
Category III = Score 30-50	12
Category IV = Score < 30	35
<b>TOTAL score for functions</b>	<b>35</b>

Category based on SPECIAL CHARACTERISTICS of wetland

I \_\_\_ II \_\_\_ III \_\_\_ Does not Apply \_\_\_

**Final Category** (choose the "highest" category from above)

**3**

Check the appropriate type and class of wetland being rated.

Wetland Type	Wetland Class
<input type="checkbox"/> Vernal Pool	<input type="checkbox"/> Depressional
<input type="checkbox"/> Alkali	<input type="checkbox"/> Riverine
<input type="checkbox"/> Natural Heritage Wetland	<input type="checkbox"/> Lake-fringe
<input type="checkbox"/> Bog	<input type="checkbox"/> Slope
<input type="checkbox"/> Forest	
<input type="checkbox"/> None of the above	<input checked="" type="checkbox"/>

00296

Does the wetland being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
A1. Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		<input checked="" type="checkbox"/>
A2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		<input checked="" type="checkbox"/>
A3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		<input checked="" type="checkbox"/>
A4. Does the wetland have a local significance in addition to its functions. For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		<input checked="" type="checkbox"/>

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

## Classification of Vegetated Wetlands for Eastern Washington

Wetland Name: \_\_\_\_\_

Date: \_\_\_\_\_

- Does the wetland meet both of the following criteria?  
 The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);  
 At least 30% of the open water area is deeper than 3 m (10 ft)?  
NO - go to Step 2 YES - The wetland class is **Lake-fringe (lacustrine fringe)**
- Does the wetland meet all of the following criteria?  
 The wetland is on a slope (slope can be very gradual);  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.  
 The water leaves the wetland without being impounded?  
 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 a foot deep).  
 YES - The wetland class is **Slope**  
NO - go to Step 3
- Is the wetland in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." The wetland can contain depressions that are filled with water when the river is not flooding.  
 YES - The wetland class is **Riverine**  
NO - go to Step 4
- Is the wetland in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present, is higher than the interior of the wetland.  
 YES - The wetland class is **Depressional**  
NO - go to Step 5

Your wetland seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. If you have a wetland with several HGM classes present within its boundaries use the following table to identify the appropriate class to use for the rating system. 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 being rated.

HGM Class	Within One Delineated Wetland Boundary	Class to Use for Rating: If area of this class > 10% total
Slope + Riverine	Riverine	Riverine
Slope + Depressional	Depressional	Depressional
Slope + Lake-fringe	Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional	Depressional
Depressional + Lake-fringe	Depressional	Depressional

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

D	Depressional Wetlands	POINTS
WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality		
D	D 1.0 Does the wetland have the potential to improve water quality? (see p. 32 in text)	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland has no surface water outlet - points = 5 Wetland has an intermittently flowing, or highly constricted, outlet - points = 3 Wetland has a permanently flowing surface outlet - points = 1	3
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES NO	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest): 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	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 > 1/4 total area of wetland points = 3 Area seasonally ponded is 1/4 - 1/2 total area of wetland points = 1 Area seasonally ponded is < 1/4 total area of wetland points = 0 NOTE: See text for indicators of seasonal and permanent inundation/flooding.	3
D	Total for D1 Add the points in the boxes above	11
D	D 2.0 Does the wetland have the opportunity to improve water quality? (see p. 36) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. <ul style="list-style-type: none"> <li>Grazing in the wetland or within 150ft</li> <li>Wetland intercepts groundwater within the Reclamation Area</li> <li>Untreated stormwater flows into wetland</li> <li>Tilled fields or orchards within 150 feet of wetland</li> <li>Water from a stream or culvert flows into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Other</li> </ul>	multiplier
D	YES multiplier is 2 NO multiplier is 1 TOTAL- Water Quality Functions Multiply the score from D1 by the multiplier in D2 Record score on P. 1 of field form	11

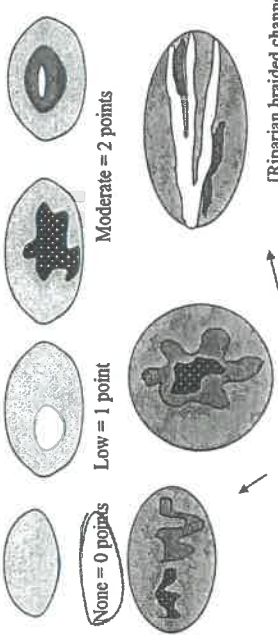
D Depressional Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
D	D 3.0 Does the wetland have the potential to reduce flooding and stream erosion? (see p. 39)	
D	D 3.1 Characteristics of surface water flows out of the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing, or highly constricted, outlet Wetland has a permanently flowing surface outlet	points = 3 points = 4 points = 0
D	D 3.2 Depth of storage during wet periods: Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water Marks of ponding are at least 3 ft above the surface The wetland is a "headwater" wetland" (see p. 39) Marks are 2 ft to < 3 ft from surface Marks are 1 ft to < 2 ft from surface Marks are 6 in to < 1 ft from surface No marks above 6 in. or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 2 points = 0
D	Total for D 3 Add the points in the boxes above	12
D	D 4.0 Does the wetland have the opportunity to reduce flooding and erosion? (see p. 43) Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other YES multiplier is 2 NO multiplier is 1	multiplier 1
D	TOTAL - Hydrologic Functions Multiply the score from D3 by the multiplier in D4 Record score on p. 1 of field form	12
Comments		

R Riverine Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality		
R	R 1.0 Does the wetland have the potential to improve water quality? (see p. 45)	
R	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 Depressions cover > 1/10 area of wetland No depressions present but cover < 1/10 area of wetland No depressions present	points = 6 points = 3 points = 1 points = 0
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland Forest or shrub 1/3 - 2/3 area of the wetland Ungrazed, emergent plants > 2/3 area of wetland Ungrazed emergent plants 1/3 - 2/3 area of wetland Forest, shrub, and ungrazed emergent < 1/3 area of wetland	points = 10 points = 5 points = 5 points = 2 points = 0
R	Total for R1 Add the points in the boxes above	
R	R 2.0 Does the wetland have the opportunity to improve water quality? (see p. 46) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. — Grazing in the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Untreated stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other YES multiplier is 2 NO multiplier is 1	multiplier
R	TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2 Record score on p. 1 of field form	
Comments		

S Slope Wetlands		Points
<b>HYDROLOGIC FUNCTIONS</b> - Indicators that wetland functions to reduce flooding and stream degradation		
S	<b>S 3.0 Does the wetland have the potential to reduce flooding and stream erosion?</b> (see p.59)	
S	<b>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland.</b> Dense, uncut, rigid vegetation covers > 90% of the area of the wetland (stems of plants should be thick enough (usually > 1/8in) or dense enough, to remain erect during surface flows) points = 6 Dense, uncut, rigid vegetation > 1/2 - 90% area of wetland points = 3 Dense, uncut, rigid vegetation > 1/4 - 1/2 area points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	
S	<b>S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows:</b> The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	<b>Total for S3</b> Add the points in the boxes above	
S	<b>S 4.0 Does the wetland have the opportunity to reduce flooding and erosion?</b> (see p.61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field). Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. — Wetland has surface runoff that can cause flooding problems downgradient — Other YES multiplier is 2 NO multiplier is 1	multiplier
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S3 by the multiplier in S4 Record score on p. 1 of field form	
Comments		

Habitat Functions		Points
<b>These questions apply to wetlands of all HGM classes.</b>		
<b>HABITAT FUNCTIONS</b> - Indicators that wetland functions to provide important habitat		
H	<b>H 1. Does the wetland have the potential to provide habitat for many species?</b>	
H	<b>H 1.1 Vegetation structure (see p.62)</b> Check the types of vegetation present if the type covers more than 10% of the area of the wetland or 1/4 acre. — Aquatic bed — Emergent plants 0-12 inches high (0 - 30 cm) — Emergent plants >12 - 40 inches high (>30 - 100cm) — Emergent plants > 40 inches high (> 100 cm) — Scrub/shrub (areas where shrubs have >30% cover) — Forested (areas where trees have >30% cover) Add the number of vegetation types that qualify. If you have: 4-6 types record points = 3 3 types points = 2 2 types points = 1 1 type points = 0	0
H	<b>H 1.2. Is one of the vegetation types "aquatic bed?" (see p. 64)</b> YES = 1 point NO = 0 points	0
H	<b>H 1.3. Surface Water (see p.65)</b> <b>H 1.3.1</b> Does the wetland have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March - early June) OR in early fall (August - 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 <b>H 1.3.2</b> Does the wetland have an intermittent or permanent stream within its boundaries, or along one side, that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? YES = 3 points NO = 0 points	0
H	<b>H 1.4. Richness of Plant Species (see p. 66)</b> Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed, canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)	0
	If you counted: > 9 species points = 2 4-9 species points = 1 < 4 species points = 0	0
	<b># of species</b>	0

00299

<p><b>H 1.5. Interspersion of habitats (see p. 67)</b> Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.</p>  <p>None = 0 points      Low = 1 point      High = 3 points      Moderate = 2 points</p> <p>[Riparian braided channel]</p> <p>NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".</p>	
<p><b>H 1.6. Special Habitat Features: (see p. 68)</b> Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Loose rocks larger than 4" or large, downed, woody debris (&gt;4in. diameter) within the area of surface ponding or in stream.</li> <li><input type="checkbox"/> Cattails or bulrushes are present within the wetland.</li> <li><input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland or within 30 m (100 ft) of the edge.</li> <li><input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.</li> <li><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt;45 degree slope) OR signs of recent beaver activity</li> <li><input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation</li> </ul> <p>Maximum score possible = 6</p>	<p>1</p>
<p>Comments</p> <p>TOTAL Potential to provide habitat Add the scores in the column above</p> <p>1</p>	

<p><b>H 2.0 Does the wetland have the opportunity to provide habitat for many species?</b></p> <p><b>H 2.1 Buffers (see p. 71)</b> Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</li> <li><input type="checkbox"/> 330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li><input type="checkbox"/> 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li><input type="checkbox"/> 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference. Points = 3</li> <li><input type="checkbox"/> 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</li> </ul> <p>If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li><input type="checkbox"/> No paved areas or buildings within 170ft (50m) of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li><input type="checkbox"/> Heavy grazing in buffer. Points = 1</li> <li><input type="checkbox"/> Vegetated buffers are &lt;6.6ft wide (2m) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland). Points = 0</li> <li><input type="checkbox"/> Buffer does not meet any of the criteria above. Points = 1</li> </ul>	<p>3</p>
<p><b>H 2.2 Wet Corridors (see p. 72)</b> H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor at least 1/4 mile long with surface water or flowing water throughout most of the year (&gt; 9 months/yr)? (dams, heavily used gravel roads, paved roads, fields filled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO go to H 2.2.3</p> <p>H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (do not include man-made ditches)? YES = 1 point NO = 0 points</p>	<p>4</p>

10

<p><b>H 2.4 Landscape</b> (choose the one description of the landscape around the wetland that best fits) (see p. 76)</p> <p>— The wetland 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)</p> <p>— There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development).</p> <p>✓ There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed?</p> <p>— There is at least 1 wetland within 1/2 mile.</p> <p>— Does not meet any of the four criteria above</p> <p style="text-align: right;">points = 5 points = 2 points = 1 points = 0</p>	2
<p><b>H 3.0</b> Does the wetland have indicators that its ability to provide habitat is reduced?</p> <p style="text-align: center;">Add the scores in the column above</p> <p><b>H 3.1</b> Indicator of reduced habitat functions (see p. 75)</p> <p>Do the areas of open water in the wetland have a resident population of carp (see text for indicators of the presence of carp)? (NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)</p> <p style="text-align: center;">YES = - 5 points NO = 0 points</p>	12
<p style="text-align: center;"><b>Points will be subtracted</b></p>	
<p><b>Total Score for Habitat Functions</b> – add the points for H 1, H 2, and H 3 and record the result on p. 1</p> <p style="text-align: center;">12</p>	
<p style="text-align: center;"><b>Comments</b></p>	

8

<p><b>H 2.3</b> Near or adjacent to other priority habitats listed by WDFW (see p. 74) Which of the following priority habitats are within 350ft (100m) of the wetland? (see text for a more detailed description of these priority habitats)</p> <p>✓ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 2 acres.</p> <p>___ <b>Cliffs:</b> Greater than 25 ft high and occurring below 5000 ft.</p> <p>___ <b>Old-growth forests:</b> (east of Cascade crest): In general, stands will be &gt;150 years of age, with 10 trees/acre that are &gt; 21 in dbh, and 1 - 3 snags/acre &gt; 12-14 in diameter.</p> <p>___ <b>Mature forests:</b> Stands with average diameters exceeding 21 in dbh; crown cover may be less than 100%; decay, 80 - 160 years old east of the Cascade crest.</p> <p>___ <b>Prairies and Steppe:</b> Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</p> <p>___ <b>Shrub-steppe:</b> Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft, composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p>___ <b>Urban Natural Open Space:</b> A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other priority habitats, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</p> <p style="text-align: right;">If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points</p>	2
<p style="text-align: center;"><b>Comments</b></p>	



**WETLAND RATING FORM - EASTERN WASHINGTON**

Wetland Name: Wetland D Date: 9-17-08

Name of wetland (if known): Palomira Fields

Location: SEC: \_\_\_ TWP: \_\_\_ R: \_\_\_ (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: Ed Smith Affiliation: \_\_\_ Date of site visit: 4/17-9/08

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland

I \_\_\_ II \_\_\_ III \_\_\_ IV \_\_\_

Category I = Score >70	<u>70</u>
Category II = Score 51-69	<u>8</u>
Category III = Score 30-50	<u>4</u>
Category IV = Score < 30	<u>32</u>
<b>TOTAL score for functions</b>	<b>32</b>

Category based on SPECIAL CHARACTERISTICS of wetland

I \_\_\_ II \_\_\_ III \_\_\_ Does not Apply \_\_\_

Final Category (choose the "highest" category from above)

**3**

Check the appropriate type and class of wetland being rated.

Wetland Type	Wetland Class
<input type="checkbox"/> Vernal Pool	<input type="checkbox"/> Depressional
<input type="checkbox"/> Alkali	<input checked="" type="checkbox"/> Riverine
<input type="checkbox"/> Natural Heritage Wetland	<input type="checkbox"/> Lake-fringe
<input type="checkbox"/> Bog	<input type="checkbox"/> Slope
<input type="checkbox"/> Forest	<input checked="" type="checkbox"/>
<input type="checkbox"/> None of the above	

**Does the wetland being rated meet any of the criteria below?**

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
A1. Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		<input checked="" type="checkbox"/>
A2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		<input checked="" type="checkbox"/>
A3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		<input checked="" type="checkbox"/>
A4. Does the wetland have a local significance in addition to its functions. For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		<input checked="" type="checkbox"/>

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

## Classification of Vegetated Wetlands for Eastern Washington

Wetland Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. Does the wetland meet both of the following criteria?  
 \_\_\_ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded).  
 \_\_\_ At least 30% of the open water area is deeper than 3 m (10 ft)?  
**NO - go to Step 2**      **YES - The wetland class is Lake-fringe (lacustrine fringe)**
2. Does the wetland meet all of the following criteria?  
 \_\_\_ The wetland is on a slope (slope can be very gradual),  
 \_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.  
 \_\_\_ The water leaves the wetland without being impounded?  
 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 < 30 diameter and less than a foot deep).  
**NO - go to Step 3**      **YES - The wetland class is Slope**
3. Is the wetland in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." The wetland can contain depressions that are filled with water when the river is not flooding.  
**NO - go to Step 4**      **YES - The wetland class is Riverine**
4. Is the wetland in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface at some time of the year. This means that any outlet, if present, is higher than the interior of the wetland.  
**NO - go to Step 5**      **YES - The wetland class is Depressional**
5. Your wetland seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. If you have a wetland with several HGM classes present within its boundaries use the following table to identify the appropriate class to use for the rating system. 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 being rated.

HGM Class Within One Delimited Wetland Boundary	Class to Use in Rating if area of this class > 10% total
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional

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

D Depressional Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality		
D	D 1.0 Does the wetland have the potential to improve water quality? (see p. 32 in text)	
D	D 1.1 Characteristics of surface water flows out of the wetland: D 1.1.1 Wetland has no surface water outlet - Wetland has an intermittently flowing, or highly constricted, outlet - Wetland has a permanently flowing surface outlet - D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES NO	points = 3 points = 3 points = 1  points = 3 points = 0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest): Wetland has persistent, ungrazed, vegetation for > 2/3 of area Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 3 points = 3 points = 1 points = 0
D	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 > 1/2 total area of wetland Area seasonally ponded is 1/4 - 1/2 total area of wetland Area seasonally ponded is < 1/4 total area of wetland NOTE: See text for indicators of seasonal and permanent inundation/flooding.	points = 3 points = 1 points = 0
D	Total for D 1	10
D	D 2.0 Does the wetland have the opportunity to improve water quality? (see p. 38)	
D	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. ___ Grazing in the wetland or within 150ft ___ Wetland intercepts groundwater within the Reclamation Area ___ Untreated stormwater flows into wetland ___ Tilled fields or orchards within 150 feet of wetland ___ Water from a stream or culvert flows into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ___ Residential, urban areas, golf courses are within 150 ft of wetland ___ Other _____ YES multiplier is 2 NO multiplier is 1	multiplier 2
D	TOTAL - Water Quality Functions	20
Multiply the score from D1 by the multiplier in D2		Record score on p. 1 of field form

D Depressional Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
D	D 3.0 Does the wetland have the potential to reduce flooding and stream erosion? (see p. 39)	
D	D 3.1 Characteristics of surface water flows out of the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing, or highly constricted, outlet Wetland has a permanently flowing surface outlet	points = 8 points = 4 points = 0
D	D 3.2 Depth of storage during wet periods: Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water Marks of ponding are at least 3 ft above the surface The wetland is a "headwater" wetland (see p. 39) Marks are 2 ft to < 3 ft from surface Marks are 1 ft to < 2 ft from surface Marks are 6 in to < 1 ft from surface No marks above 6 in. or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 2 points = 0
D	Total for D 3	8
D	D 4.0 Does the wetland have the opportunity to reduce flooding and erosion? (see p. 42) Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir. Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other	multiplier
D	TOTAL - Hydrologic Functions	8
Comments		

R Riverine Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality (see p. 45)		
R	R 1.0 Does the wetland have the potential to improve water quality? (see p. 45)	
R	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 Depressions cover > 1/10 area of wetland Depressions present but cover < 1/10 area of wetland No depressions present	points = 6 points = 3 points = 1 points = 0
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland Forest or shrub 1/3 - 2/3 area of the wetland Ungrazed, emergent plants > 2/3 area of wetland Ungrazed emergent plants 1/3 - 2/3 area of wetland Forest, shrub, and ungrazed emergent < 1/3 area of wetland	points = 10 points = 5 points = 5 points = 2 points = 0
R	Total for R1	10
R	R 2.0 Does the wetland have the opportunity to improve water quality? (see p. 46) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. — Grazing in the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Untreated stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other	multiplier
R	TOTAL - Water Quality Functions	10
Comments		

S Slope Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
S	S 3.0 Does the wetland have the potential to reduce flooding and stream erosion? (see p. 59)	
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation > 1/2 - 90% area of wetland Dense, uncut, rigid vegetation > 1/4 - 1/2 area More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES NO points = 2 points = 0	
S	Total for S3 Add the points in the boxes above	
S	S 4.0 Does the wetland have the opportunity to reduce flooding and erosion? (see p. 61) Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field). Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. - Wetland has surface runoff that can cause flooding problems downstream - Other YES multiplier is 2 NO multiplier is 1	multiplier
S	TOTAL - Hydrologic Functions Multiply the score from S3 by the multiplier in S4 Record score on p. 1 of field form	
Comments		

Habitat Functions		Points
HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat		
These questions apply to wetlands of all HGM classes.		
H 1. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Vegetation structure (see p. 62) Check the types of vegetation present if the type covers more than 10% of the area of the wetland or 1/4 acre. Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 inches high (0 - 30 cm) <input type="checkbox"/> Emergent plants >12 - 40 inches high (>30 - 100cm) <input type="checkbox"/> Emergent plants > 40 inches high (> 100 cm) <input type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input type="checkbox"/> Forested (areas where trees have >30% cover) Add the number of vegetation types that qualify. If you have: 4-6 types record points = 3 3 types points = 2 2 types points = 1 1 type points = 0		
H 1.2. Is one of the vegetation types "aquatic bed"? (see p. 64) YES = 1 point NO = 0 points		
H 1.3. Surface Water (see p. 65) H 1.3.1 Does the wetland have areas of "open" water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March - early June) OR in early fall (August - end of September)? Note: answer YES for Lake-fringe wetlands YES = 3 points & go to H 1.4 H 1.3.2 Does the wetland have an intermittent or permanent stream within its boundaries, or along one side, that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)? YES = 3 points NO = 0 points		
H 1.4. Richness of Plant Species (see p. 66) Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed, canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) If you counted: > 9 species points = 2 4-9 species points = 1 < 4 species points = 0 points		

6

<p><b>H 1.5. Interspersion of habitats. (see p. 67)</b> Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points</p> <p>[Riparian braided channel]</p> <p>NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".</p>	<p><b>H 1.6. Special Habitat Features. (see p. 68)</b> Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p>Loose rocks larger than 4" or large, downed, woody debris (&gt;4in. diameter) within the area of surface ponding or in stream.</p> <p>Cattails or bulrushes are present within the wetland.</p> <p>Standing snags (diameter at the bottom &gt; 4 inches) in the wetland or within 30 m (100 ft) of the edge.</p> <p>Emergent or shrub vegetation in areas that are permanently inundated/ponded. The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.</p> <p>Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt;45 degree slope) OR signs of recent beaver activity</p> <p>Invasive species cover less than 20% in each stratum of vegetation.</p> <p><b>TOTAL. Potential to provide habitat</b> Add the scores in the column above</p> <p>Maximum score possible = 6</p>
	<p>0</p>
	<p>0</p>

<p><b>H 2.0 Does the wetland have the opportunity to provide habitat for many species?</b></p> <p><b>H 2.1 Buffers (see p. 71)</b> Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <ul style="list-style-type: none"> <li>330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</li> <li>330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference. Points = 3</li> <li>170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</li> </ul> <p>If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> <li>No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>No paved areas or buildings within 170ft (50m) of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> <li>Heavy grazing in buffer. Points = 1</li> <li>Vegetated buffers are &lt;6.6ft wide (2m) for more than 95% of the circumference (e.g. filled fields, paving, basalt bedrock extend to edge of wetland). Points = 0</li> <li>Buffer does not meet any of the criteria above. Points = 1</li> </ul>	<p><b>H 2.2 Wet Corridors (see p. 72)</b> H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor at least 1/4 mile long with surface water or flowing water throughout most of the year (&gt; 9 months/yr)? (dams, heavily used gravel roads, paved roads, fields filled to edge of stream, or pasture to edge of stream are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken, vegetated corridor, at least 1/4 mile long with water flowing seasonally, OR a lake-fringe wetland without a "wet" corridor, OR a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO = go to H 2.2.3</p> <p>H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (do not include man-made ditches)? YES = 1 point NO = 0 points</p>
	<p>1</p>

2

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 74) which of the following priority habitats are within 330ft (100m) of the wetland? (see text for a more detailed description of these priority habitats)

Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

Aspen Stands: Pure or mixed stands of aspen greater than 2 acres.

Cliffs: Greater than 25 ft high and occurring below 5000 ft.

Old-growth forests: (east of Cascade crest): In general, stands will be >150 years of age, with 10 trees/acre that are > 21 in dbh, and 1 - 3 snags/acre > 12-14 in diameter.

Mature forests: Stands with average diameters exceeding 21 in dbh; crown cover may be less than 100%; decay, 80 - 160 years old east of the Cascade crest.

Prairies and Steppe: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.

Shrub-steppe: Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs.

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

Caves: A naturally occurring cavity, recess, void, or system of interconnected passages

Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.

Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other priority habitats, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.

Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).

If wetland has 2 or more Priority Habitats = 4 points  
 If wetland has 1 Priority Habitat = 2 points  
 No Priority habitats = 0 points

0

Comments

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H 2.4 Landscape. Choose the one description of the landscape around the wetland that best fits) (see p. 76)

— The wetland 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 districts, or reservoirs) points = 5

— There are at least 3 other wetlands within 1/4 mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development). points = 5

— There are at least 3 other wetlands within 1/4 mile, BUT the connections between them are disturbed? points = 2

— There is at least 1 wetland within 1/4 mile. points = 1

— Does not meet any of the four criteria above points = 0

2

H 2. TOTAL Score - opportunity for providing habitat Add the scores in the column above

4

H 3.0 Does the wetland have indicators that its ability to provide habitat is reduced? Add the scores in the column above

H 3.1 Indicator of reduced habitat functions (see p. 75)

Do the areas of open water in the wetland have a resident population of carp (see text for indicators of the presence of carp)? (NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)

YES = - 5 points

NO = 0 points

Points will be subtracted

4

Total Score for Habitat Functions - add the points for H 1, H 2, and H 3 and record the result on p. 1

4

Comments