

Page 6 of the Bristlecone Ecology report discusses the area in question. Under the *Wetlands and Waters of the U.S.* section, the relevant info is:

"Three of the features identified in the NHD/NWI data, the R5UBH wetland/NHD pond and the R4SBC wetland, both in the southwest portion of the property, are not depicted accurately in the desktop data. These features do not exist."

Please see the previously submitted report.



May 12, 2020

Mr. Phillip and Mrs. Mary Jean Buford  
P.O. Box 100  
Ordway, CO 81063

RE: Wetlands and Threatened & Endangered Species Report  
Judge Orr Eastonville Commercial Center  
El Paso County, Colorado

Dear Mr. and Mrs. Buford:

Bristlecone Ecology, LLC (B.E.) was retained by Phillip and Mary Jean Buford (“Client”) to complete a wetlands and Waters of the U.S. (WOTUS) delineation and a threatened & endangered species (TES) habitat assessment for the Judge Orr Eastonville Commercial Center (“Project”) in El Paso County, Colorado. The Project will involve a zoning change from Rural Residential to Commercial Service, and converting the existing, single-residence lot at 8507/8531 Eastonville Road into multiple commercial use lots, including a bank, retail stores, and enclosed storage. This report presents the results of a wetland delineation of streams and wetlands, and a habitat assessment for TES on the Project property. The purpose of the wetland delineation was to inform a preliminary determination of the potential jurisdictional status of aquatic features (i.e. wetlands and other WOTUS) on the property as defined in Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA). It is important to note that only the U.S. Army Corps of Engineers (USACE) can make official determinations regarding the jurisdictional status of aquatic resources. The purpose of the TES habitat assessment was to determine the potential presence of any TES on the property in accordance with El Paso County requirements and requirements of the Endangered Species Act (ESA).

## PROJECT LOCATION

The Project is located in Sections 31 and 32, Township 12 South, Range 64 West, and can be found on the U.S. Geological Survey’s (USGS) Falcon 7.5-minute quadrangle (Attachment I: Project Location Map). The Project encompasses approximately 36 acres east of Eastonville Road, and north of Judge Orr Road (Attachment I). Coordinates for the approximate Project center are latitude 38.957343° north and longitude -104.586987° west, WGS 84 datum. Project elevations range from approximately 6,925 feet above mean sea level (AMSL) in the southeast corner to approximately 6,955 feet AMSL in the northwest corner.

## ECOLOGICAL SETTING

The Project is situated within the Foothill Grasslands Level IV ecoregion, a subdivision of the Southwestern Tablelands Level III ecoregion (Chapman et al. 2006). The Foothills Grasslands region is generally characterized by dissected and irregular plains with increasing residential development. Vegetative cover of the Foothills Grasslands is predominantly shortgrass prairie with blue grama,

buffalograss, green needlegrass (*Nassella viridula*), needle-and-thread (*Hesperostipa comata*), and purple three-awn (*Aristida purpurea*). Isolated areas of sand sagebrush (*Artemisia filifolia*), yucca (*Yucca* spp.), and cholla (*Cylindropuntia* spp.) also occur (Chapman et al. 2006). Along the more developed areas of the Front Range where the ecoregion begins to transition to the pine-oak woodlands, vegetation includes ponderosa pine (*Pinus ponderosa*), Gambel oak (*Quercus gambelii*), mountain mahogany (*Cercocarpus montanus*), skunkbush (*Rhus trilobata*), western serviceberry (*Amelanchier alnifolia*), and chokecherry (*Prunus virginiana*). Riparian areas often include cottonwoods (*Populus* spp.), willow trees and shrubs (*Salix* spp.), alders (*Alnus* spp.), and elms (*Ulmus* sp.). Existing suburban and rural residential development surrounds the Project in varying densities on all sides.

## METHODS

The purpose of the wetland delineation was to survey and delineate the boundaries of potentially jurisdictional water features within the Project property, as defined under Section 404 of the CWA and Section 10 of the RHA. The purpose of the TES habitat assessment was to determine the potential for occurrence of TES through an evaluation of suitable habitat presence/absence at the site.

Prior to the on-site assessments, a preliminary desktop analysis was performed to evaluate overall aquatic resource characteristics of the Project property and identify the locations of potentially jurisdictional wetlands and watercourses. Similarly, publicly available data were reviewed to assess the presence or absence of suitable habitat for TES. Spatial data, aerial imagery sources, and other publicly available data reviewed included:

- USGS National Hydrography Dataset (NHD),
- USGS aerial imagery
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps,
- USFWS Information for Planning and Conservation (IPaC) System,
- USFWS Critical Habitat Portal,
- Natural Resource Conservation Service (NRCS) soil survey maps,
- Federal Emergency Management Agency (FEMA) floodplain maps,

A site visit was conducted on April 8<sup>th</sup>, 2020 to verify the information identified in the preliminary desktop review. Site conditions were assessed for the potential presence of TES listed in the USFWS' IPaC database query. Habitat suitable for TES was delineated using a Trimble Geo 7X mapping unit with sub-foot accuracy.

Watercourses and other aquatic features identified in the desktop analysis were inspected in the field to assess their jurisdictional potential. A routine wetland delineation was conducted during the site visit on April 8<sup>th</sup>, 2020. The wetland delineation was performed in accordance with the Great Plains Regional Supplement (Version 2.0) (USACE 2010) to the 1987 USACE Wetland Delineation Manual (USACE 1987).

The determination of a wetland depends on the presence or absence of three parameters: 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology during the wettest season. Vegetation, soils, and hydrology were analyzed to determine the presence of wetlands, watercourses,

and other special aquatic features. A wetland delineation was conducted along potential WOUS, including wetlands, within the Project area. Boundaries were mapped using a Trimble Geo 7X mapping unit. Photographs were taken depicting field conditions at the time of the site visit (Attachment II: Photographic Log). Results of the field assessment and descriptions of observed features are detailed below (Attachment III: Wetland Determination Data Forms). Wetland indicator status for vegetation was determined following Lichvar et al. (2016).

## BACKGROUND DOCUMENTATION REVIEW

Aerial photographs, NHD data, NWI data, USGS topographic maps, FEMA Flood Rate Insurance Maps (FIRM), NRCS county soil survey maps, USFWS' Critical Habitat Portal, and IPaC were used to review wetlands/WOTUS and TES information prior to the site visit. A discussion of the desktop wetland evaluation and TES habitat assessment follows.

### *Wetlands and Waters of the U.S.*

Aerial photographs dated 2006, 2011, 2013, 2015, 2017, and 2019 were obtained for review from the U.S. Department of Agriculture's (USDA) Farm Service Agency (USDA 2019). Aerial photograph interpretation was conducted to identify potential wetlands, watercourses, and other notable landscape features within the Project area. Riparian vegetation was apparent in aerial photos along stream channels/ditches bordering the property on east, west, and south.

A review of NHD data (USGS 2020) and NWI maps (USFWS 2020) was conducted to determine the potential presence, location, size, and type of wetlands located within the Project area. The NHD depicts the expected locations of flowlines for streams and rivers based on available topographic and data and aerial images. The USFWS generates NWI maps through aerial photograph interpretation. NHD and NWI maps may not accurately depict the extent or existence of wetlands or other aquatic features, nor do maps consistently and accurately identify wetland type. As such, the maps were used for preliminary analysis only. Field reconnaissance was conducted to determine the true extent and type of wetlands located within the Project area, and to verify the information gathered through NHD and NWI data review. The NHD depicted three flowlines, and NWI data depicted two Riverine wetlands within the Project area, one forming the eastern border of the site and one running through the southwest corner (Attachment II: National Hydrography Dataset & National Wetlands Inventory Map). Types and locations of NHD streams and NWI wetlands included:

- One NHD stream channel forming the western and southern boundaries of the property
- One NHD stream channel near the eastern boundary of the property
- One NHD pond coinciding with an NWI Riverine, unconsolidated bottom, permanently flooded wetland (R5UBH) in the southwest portion of the property
- One Riverine, intermittent, streambed, temporarily flooded wetland (R4SBA), roughly following the eastern border of the property, not co-located with the previous NHD stream
- One Riverine, intermittent, streambed, seasonally flooded wetland (R4SBC) running through the southwest corner of the property

A review of FEMA floodplain maps (FEMA 2018) was conducted to determine the existence, location, and extent of floodplains within the Project area. The floodplain maps depict mapped flood zones



along rivers and tributaries. The maps depict the following data: 100-year floodplains (1% chance of annual flooding) and 500-year floodplains (0.2% annual chance of flooding), the height of the base flood (Base Flood Elevations), and risk premium zones developed from topographical information across a floodplain. A review of FEMA's National Flood Hazard maps (2018) indicated that some portions of the Project area are identified as a Zone A flood zone, which includes all areas within the 1-percent-annual-chance floodplains (Attachment III: FEMA Floodplain Map).

The NRCS Soil Survey indicates the Project area is entirely within a single soil association: Columbine gravelly sandy loam, 0 to 3% slopes (NRCS 2019) (Attachment IV: Soils Survey Map). Columbine gravelly sandy loam is classified as a hydric soil in El Paso County (NRCS 2020).

### *Threatened & Endangered Species*

Section 9(a)(1) of the Endangered Species Act (ESA) prohibits the take of federally listed species and their habitats, and defines such take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C. § 1531). Adverse effects to species listed under the ESA, or their habitats, require consultation with USFWS pursuant to Section 7 of the Act. In order to determine if impacts to listed species could result from project development, the USFWS' IPaC database (USFWS 2020b) and Critical Habitat Portal (USFWS 2018) were used to determine the likelihood of occurrence of federally listed TES within the Project area. There is no Critical Habitat within nine miles of the Project site. The IPaC query listed eight species, including four birds, two fishes, and two flowering plants with the potential to be affected by Project development (Table 1. Federally Listed TES Potentially Impacted by the Project). Based on the information known about the site prior to the site visit, B.E. provided our professional opinion regarding the probability that these species may occur within the Project site and their probability of being impacted by Project development. These likelihoods were confirmed following the on-site habitat assessment.

One additional federally threatened species, Preble's meadow jumping mouse (*Zapus hudsonius preblei*) was not listed in the IPaC query but does have a range that includes the Project area. Preble's meadow jumping mouse is excluded from the analysis due to the Project site's location within the Colorado Springs Block Clearance Area issued by the USFWS (Attachment V: Preble's Meadow Jumping mouse Block Clearance Map).

**Table 1. Federally Listed TES Potentially Impacted by the Project (USFWS 2020)**

Common Name	Scientific Name	Habitat Requirements and Likelihood of Impacts	Federal Status <sup>1</sup>
<b>Birds</b>			
Least tern	<i>Sternula antillarum</i>	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <b>Likelihood of impacts: None, Project is not within the watersheds listed.</b>	FE
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Requires mature, old-growth forests of white pine, Douglas fir, or ponderosa pine and narrow canyons with steep slopes and rocky cliffs (Gutiérrez et al. 1995). The closest USFWS designated Critical habitat is more than 16 miles southwest in mountainous terrain (USFWS, 2018). <b>Likelihood of impacts: None, habitat not present.</b>	FT
Piping plover	<i>Charadrius melodus</i>	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <b>Likelihood of impacts: None, Project is not within the watersheds listed.</b>	FT
Whooping crane	<i>Grus americana</i>	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <b>Likelihood of impacts: None, Project is not within the watersheds listed.</b>	FE
<b>Fishes</b>			
Greenback cutthroat trout	<i>Oncorhynchus clarkii stomias</i>	Cold, clear, gravely headwater streams and mountain lakes that provide an abundant food supply of insects. <b>Likelihood of impacts: None, habitat not present.</b>	FT
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <b>Likelihood of impacts: None, Project is not within the watersheds listed.</b>	FE
<b>Flowering Plants</b>			
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	Primarily occurs along seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels or valleys, and lakeshores. May also occur along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside borrow pits, reservoirs, and other human-modified wetlands. There are no known populations in El Paso County, and the site is above the elevation where surveys would be required (USFWS 1992). <b>Likelihood of impacts: None, extremely unlikely for the species to occur.</b>	FT
Western prairie fringed orchid	<i>Platanthera praeclara</i>	Occurs in tallgrass prairie in Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and Oklahoma. Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <b>Likelihood of impacts: None, Project is not within the watersheds listed.</b>	FT

<sup>1</sup>FE= Federally Endangered; FT=Federally Threatened

## SITE RECONNAISSANCE

The site reconnaissance on April 8<sup>th</sup>, 2020 confirmed the presence of two aquatic features on the Project property. Both are presumed jurisdictional under the CWA. The habitat assessment for federally listed TES confirmed that habitat is not present on the site.

### *Wetlands and Waters of the U.S.*

Information gathered from the site reconnaissance indicated that there were two jurisdictional streams running through the Project area. Three of the features identified in the NHD/NWI data, the R5UBH wetland/NHD pond and the R4SBC wetland, both in the southwest portion of the property, are not depicted accurately in the desktop data. These features do not exist. The R4SBA wetland along the eastern boundary of the property does appear to exist as depicted in the NWI data, but it is located outside the Project area boundary as was not delineated. The NHD flowlines along the western-southern boundary and near the eastern boundary are present and were delineated (Attachment VI: Wetlands Map). Both were classified according to Cowardin *et al.* (1979) as R5UBF – Riverine, unknown perennial, unconsolidated bottom, semi-permanently flooded.

Hydrologic indicators, dominant vegetation, and soil samples were examined during the field reconnaissance to determine the presence/absence of wetlands. Sample points were taken at specific locations in order to provide an understanding of typical wetlands present at the site. Hydrologic indicators included High Water Table (A2), Saturation (A3), Water-stained Leaves (B9), Hydrogen Sulfide (C1), Dry-Season Water Table (C2), Oxidized Rhizospheres (C3), and FAC-Neutral Test (D5). Vegetation was largely composed of dominant obligate or facultative-wetland vegetation, including broadleaf cattail (*Typha latifolia*), softstem bulrush (*Schoenoplectus tabernaemontani*), arctic rush (*Juncus arcticus*), Nebraska sedge (*Carex nebrascensis*), and sandbar willow (*Salix exigua*). Soils were very gravelly and sandy; Sandy Redox (S5) and Hydrogen Sulfide (A4) indicators were both present.

### *Threatened & Endangered Species*

Based on the information obtained from the IPaC query and the results of the on-site habitat assessment, B.E. confirmed that there is no suitable habitat in the vicinity of the Project for any federally listed threatened or endangered species. Five of the eight species listed in the IPaC data do not occur in the Project area but could be affected by water depletions in the South Platte River system. The Project is located in the Arkansas River basin, thus no adverse effects to listed species downstream are anticipated.

## CONCLUSIONS

In summary, two jurisdictional Riverine wetlands are located in the Project area. No habitat suitable to support federal TES was observed in the Project area, and no impacts to listed species are expected to result from Project development. Both wetlands are classified as Riverine, unknown perennial, unconsolidated bottom, semi-permanently flooded wetlands (R5UBF), and they generally run along the boundaries of the property on the west, south, and east. The western stream occasionally transitions from a jurisdictional stream channel containing wetlands a stream channel with no

wetlands; in these instances, the ordinary high water mark (OHWM) was delineated in the field in the absence of wetlands. The OHWM, in these cases, still delineates a jurisdictional WOTUS, though wetlands are not present. As such, all aquatic features including wetlands and streams within the Project area are expected to be considered jurisdictional WOUS by the USACE. Accordingly, any impacts to these channels or associated in-stream, adjacent or abutting wetlands would require permitting through the USACE under Section 404 of the CWA.

The USACE typically has jurisdiction over navigable or traditionally navigable waters, relatively permanent waters, and wetlands that abut such waters, and determines jurisdiction over other waters based predominantly on their significant nexus to navigable or traditionally navigable waters (i.e. WOTUS). Impacts to WOTUS should be avoided and minimized to the extent possible. A permit under Section 404 of the CWA is required for the discharge of dredged or fill material into WOTUS and mitigation may be required.

While the USACE regulates only those activities resulting in a discharge of dredge or fill material into waters of the U.S., the Colorado Department of Public Health and Environment (CDPHE) has the authority to regulate activities resulting in a discharge of pollutants into state waters. The CDPHE conducts Section 401 certification reviews of projects in Colorado requiring a Section 404 permit from the USACE. The purpose of certification review is to determine whether a proposed discharge will comply with Colorado water quality standards.

In Colorado, joint Section 404 and 401 permitting is authorized through the Nationwide Permit (NWP) program. An NWP is a simplified 404 permit for some small-scale activities which minimally affect WOTUS designed to streamline the permitting process and eliminate the need to issue an Individual Permit (IP). NWPs allow certain activities, such as road and utility crossings, to take place which result in minimal impacts to WOTUS, including wetlands. If the Project should require a permit, either NWP 14 (Linear Transportation Projects) or NWP 39 (Commercial and Institutional Developments) would likely be the applicable NWPs for the Project.

Should impacts to WOUS exceed the threshold of an NWP, the Project would be permitted under an IP, or standard permit. An IP requires a 30-day public notice period, and a separate 401 Water Quality Certification would be required through CDPHE. It is anticipated that Project construction can be completed without exceeding the impact thresholds of NWP 14, and thus an IP would not be necessary.



If you should have any questions regarding the information or recommendations provided in this report, or require additional information, please feel free to contact me directly at 971.237.3906, or at [dmaynard@bristleconeecology.com](mailto:dmaynard@bristleconeecology.com).

Sincerely,

**Bristlecone Ecology, LLC**

Daniel Maynard  
Owner/Ecologist

## REFERENCES

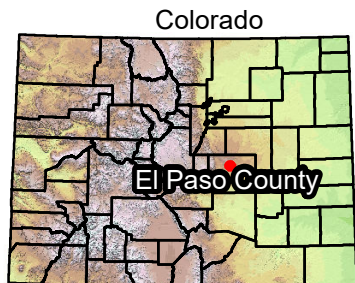
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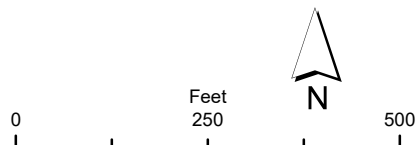
## ATTACHMENTS

- I. Project Location Map
- II. NHD & NWI Map
- III. FEMA Floodplain Map
- IV. Soils Survey Map
- V. Preble's Meadow Jumping Mouse Block Clearance Map
- VI. Wetlands Map
- VII. Wetland Determination Data Forms
- VIII. Representative Site Photos





- █ Project Area
- Road Easement
- Stream



## Judge Orr Eastonville Commerce Center

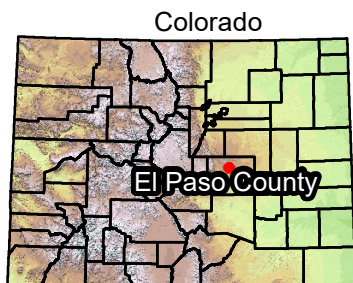
Project Location Map



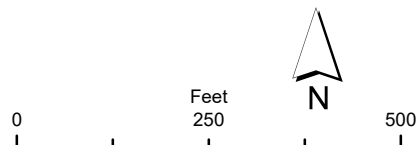




Source: NAIP Imagery, 2019  
FEMA National Flood Hazard Layer (NFHL), 12/07/2018



- Project Area
- Road Easement
- Stream
- Zone A
- Zone X, AREA OF MINIMAL FLOOD HAZARD

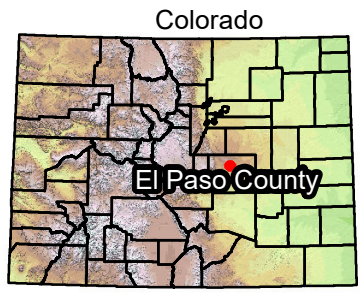


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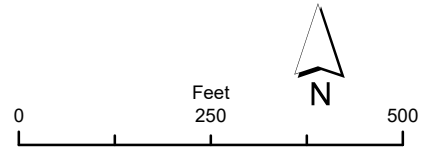
FEMA Floodplain Map







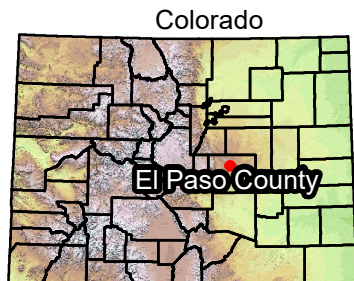
- Project Area
- Road Easement
- Stream
- NWI Wetland



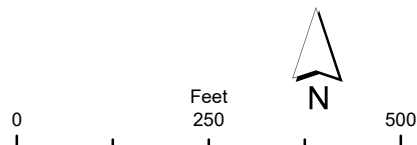
**Judge Orr Eastonville  
Commerce Center**  
National Hydrography Dataset  
&  
National Wetlands Inventory  
Map







- Project Area
- Road Easement
- Stream
- 19; Columbine gravelly sandy loam, 0 to 3 percent slopes

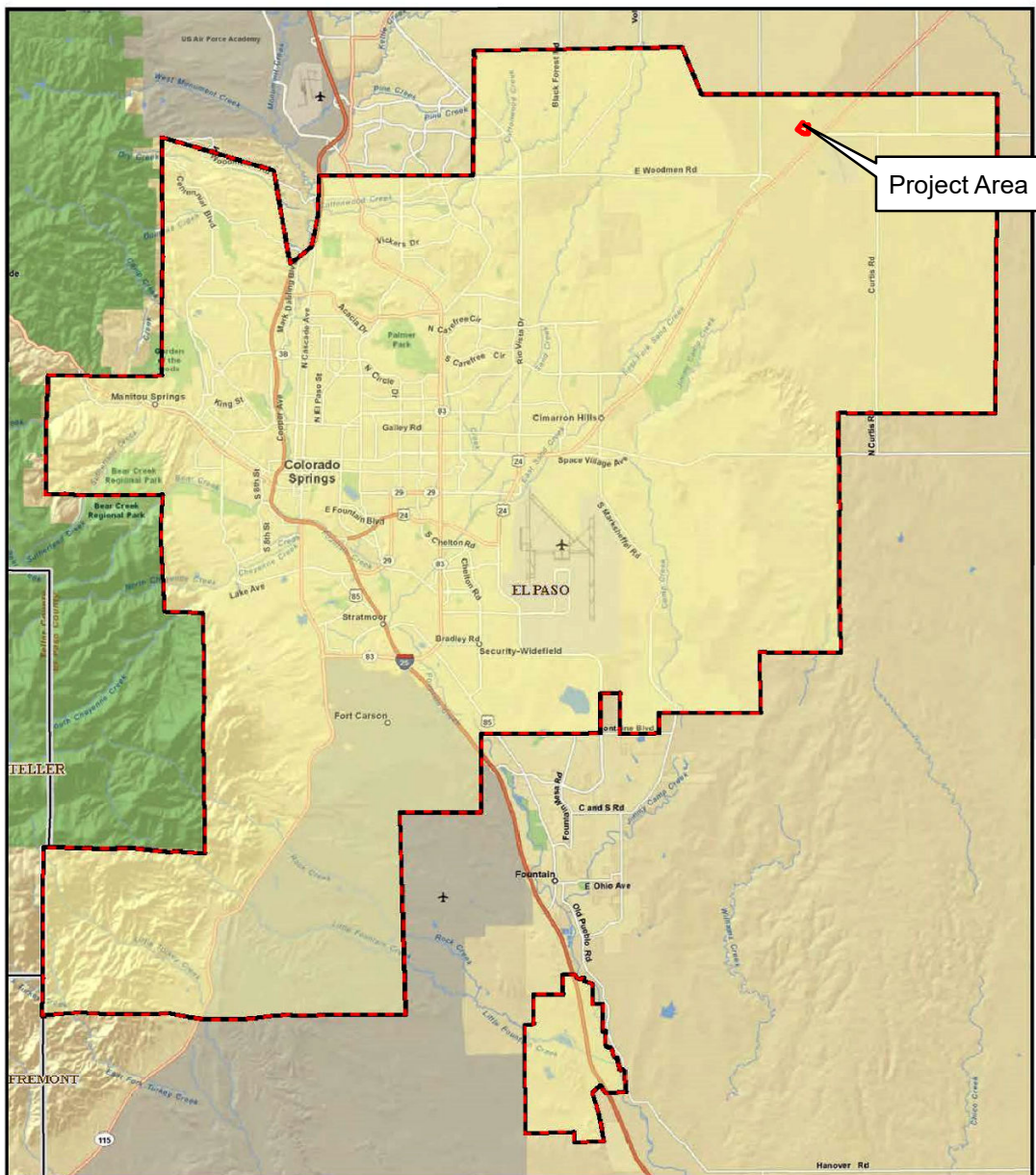


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### Soils Survey Map







# PREBLE'S MEADOW JUMPING MOUSE BLOCK CLEARANCE MAP: COLORADO SPRINGS



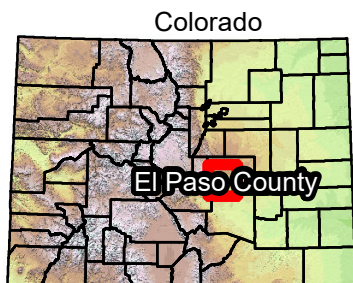
Please contact the U.S. Fish & Wildlife Service, Colorado Field Office, at (303) 236-4773 for assistance using this map. Visit <http://1.usa.gov/n5r48y> for more information on Preble's and the Block Clearance.



Block Clearance Area



County Boundaries



Project Area

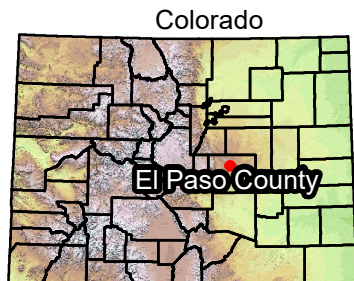
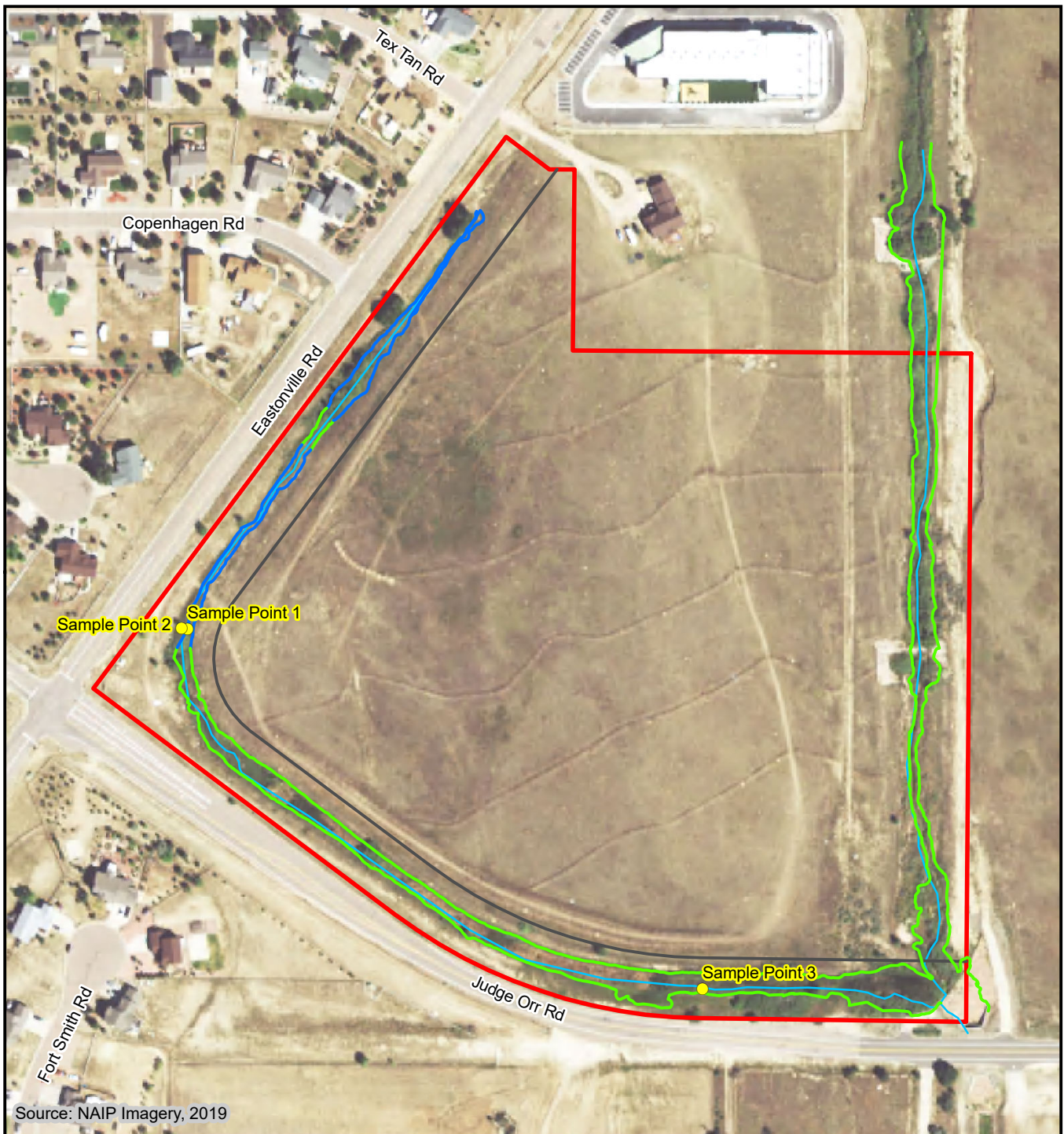


## Judge Orr Eastonville Commerce Center

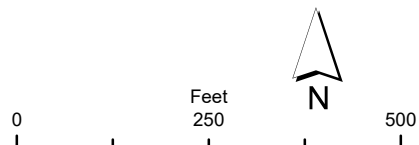
Preble's Meadow  
Jumping Mouse  
Block Clearance Map







- ▮ Project\_Area
- Sample Point
- OHWM lacking wetlands
- Wetlands
- Road Easement
- Stream



## Judge Orr Eastonville Commerce Center

### Wetlands Map



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Buford Property City/County: El Paso county Sampling Date: 04/08/2020  
 Applicant/Owner: Mary Jean & Phillip Buford State: CO Sampling Point: Sample Pt. 1  
 Investigator(s): Dan Maynard Section, Township, Range: Section 32, T12S, R64W  
 Landform (hillslope, terrace, etc.): Slough/Streambed Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): LRR G Lat: 38.957073° N Long: -104.589646° W Datum: WGS84  
 Soil Map Unit Name: Columbine (Torriorthentic Haplustolls) NWI classification: N/A

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: While not a wetland, this slough is presumed to be a Water of the U.S.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'x30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
1. <u>Populus deltoides</u>	<u>3</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
2. _____	_____	<input type="checkbox"/>	_____															
3. _____	_____	<input type="checkbox"/>	_____															
4. _____	_____	<input type="checkbox"/>	_____															
		<u>3</u>	= Total Cover															
<b>Sapling/Shrub Stratum (Plot size: <u>15'x15'</u>)</b>																		
1. <u>Salix exigua</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Prevalence Index worksheet:</b> <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>115</u></td> <td>x 2 = <u>230</u></td> </tr> <tr> <td>FAC species <u>11</u></td> <td>x 3 = <u>33</u></td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>1</u></td> <td>x 5 = <u>5</u></td> </tr> <tr> <td>Column Totals: <u>127</u> (A)</td> <td><u>268</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species <u>115</u>	x 2 = <u>230</u>	FAC species <u>11</u>	x 3 = <u>33</u>	FACU species _____	x 4 = <u>0</u>	UPL species <u>1</u>	x 5 = <u>5</u>	Column Totals: <u>127</u> (A)	<u>268</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = <u>0</u>																	
FACW species <u>115</u>	x 2 = <u>230</u>																	
FAC species <u>11</u>	x 3 = <u>33</u>																	
FACU species _____	x 4 = <u>0</u>																	
UPL species <u>1</u>	x 5 = <u>5</u>																	
Column Totals: <u>127</u> (A)	<u>268</u> (B)																	
2. _____	_____	<input type="checkbox"/>	_____															
3. _____	_____	<input type="checkbox"/>	_____															
4. _____	_____	<input type="checkbox"/>	_____															
5. _____	_____	<input type="checkbox"/>	_____															
		<u>70</u>	= Total Cover															
<b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>																		
1. <u>Juncus arcticus</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> + 1 - Rapid Test for Hydrophytic Vegetation + 2 - Dominance Test is >50% + 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Poa interior</u>	<u>7</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. <u>Bromus inermis</u>	<u>3</u>	<input type="checkbox"/>	<u>UPL</u>															
4. <u>Equisetum arvense</u>	<u>1</u>	<input type="checkbox"/>	<u>FAC</u>															
5. <u>Other forbs</u>	<u>2</u>	<input type="checkbox"/>	<u>-</u>															
6. _____	_____	<input type="checkbox"/>	_____															
7. _____	_____	<input type="checkbox"/>	_____															
8. _____	_____	<input type="checkbox"/>	_____															
9. _____	_____	<input type="checkbox"/>	_____															
10. _____	_____	<input type="checkbox"/>	_____															
		<u>58</u>	= Total Cover															
<b>Woody Vine Stratum (Plot size: <u>30'x30'</u>)</b>																		
1. <u>N/A</u>	_____	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
2. _____	_____	<input type="checkbox"/>	_____															
		<u>0</u>	= Total Cover															
% Bare Ground in Herb Stratum <u>42.00</u>																		
Remarks:																		



# SOIL

Sampling Point: Pt. 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5"	10YR 3/2	100	-	-	-	-	SL	Gravelly
5-18+"	10YR 5/3	100	-	-	-	-	LS	Very gravelly

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: N/A  
Depth (inches): N/A

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil indicators, but high sand accretion

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- + Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- + Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- + FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☒ No ☐ Depth (inches): 9"  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Source of hydrology unclear; possibly artificial as this appears to be a ditch installed to convey stormwater runoff

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Buford Property City/County: El Paso County Sampling Date: 4/8/2020  
 Applicant/Owner: Mary Jean & Phillip Buford State: CO Sampling Point: Sample Pt. 2  
 Investigator(s): Dan Maynard Section, Township, Range: Section 32, T12S, R64W  
 Landform (hillslope, terrace, etc.): Slough/Terrace Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): LRR G Lat: 38.957076° N Long: -104.589681° W Datum: WGS84  
 Soil Map Unit Name: Columbine (Torriortentic Haplustolls) NWI classification: N/A

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Adjacent to active channel a few feet from Sample Point 1			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'x30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Populus deltoides</u>	<u>3</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. _____	_____	<input type="checkbox"/>	_____
3. _____	_____	<input type="checkbox"/>	_____
4. _____	_____	<input type="checkbox"/>	_____
<u>3</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'x15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix exigua</u>	<u>65</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
2. _____	_____	<input type="checkbox"/>	_____
3. _____	_____	<input type="checkbox"/>	_____
4. _____	_____	<input type="checkbox"/>	_____
5. _____	_____	<input type="checkbox"/>	_____
<u>65</u> = Total Cover			
Herb Stratum (Plot size: <u>5'x5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Juncus arcticus</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
2. <u>Poa interior</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>
3. <u>Bromus inermis</u>	<u>2</u>	<input type="checkbox"/>	<u>UPL</u>
4. <u>Sorghastrum nutans</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>
5. _____	_____	<input type="checkbox"/>	_____
6. _____	_____	<input type="checkbox"/>	_____
7. <u>+</u>	_____	<input type="checkbox"/>	_____
8. _____	_____	<input type="checkbox"/>	_____
9. _____	_____	<input type="checkbox"/>	_____
10. _____	_____	<input type="checkbox"/>	_____
<u>92</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>30'x30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>N/A</u>	_____	<input type="checkbox"/>	_____
2. _____	_____	<input type="checkbox"/>	_____
<u>0</u> = Total Cover			
% Bare Ground in Herb Stratum <u>8.00</u>			
Remarks:			

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 3 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>145</u>	x 2 = <u>290</u>
FAC species <u>8</u>	x 3 = <u>24</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>2</u>	x 5 = <u>10</u>
Column Totals: <u>160</u> (A)	<u>344</u> (B)

 Prevalence Index = B/A = 2.15

**Hydrophytic Vegetation Indicators:**  
 + 1 - Rapid Test for Hydrophytic Vegetation  
 + 2 - Dominance Test is >50%  
 + 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

# SOIL

Sampling Point: Pt. 2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2"	10YR 3/2	100	-	-	-	-	Loam	
2-3"	10YR 5/2	99	10YR 7/4	1	C	PL	CL	
3-12+"	10YR 5/3	100	-	-	-	-	SL	Fine

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: N/A  
Depth (inches): N/A

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Redox present but not prominent or distinct; layer with redox not thick enough for hydric soil

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- + Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- + FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Possible artificial hydrologic sources

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Buford Property City/County: El Paso County Sampling Date: 4/8/2020  
 Applicant/Owner: Mary Jean & Phillip Buford State: CO Sampling Point: Sample Pt. 3  
 Investigator(s): Dan Maynard Section, Township, Range: Section 32, T12S, R64W  
 Landform (hillslope, terrace, etc.): Stream bank Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): LRR G Lat: 38.955425° N Long: -104.586652° W Datum: WGS84  
 Soil Map Unit Name: Columbine (Torriortentic Haplustolls) NWI classification: N/A

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: Fringe wetland abutting active channel			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'x30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.00</u> (A/B)														
1. <u>Populus deltoides</u>	<u>3</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
2. _____	_____	<input type="checkbox"/>	_____															
3. _____	_____	<input type="checkbox"/>	_____															
4. _____	_____	<input type="checkbox"/>	_____															
		<u>3</u>	= Total Cover															
<b>Sapling/Shrub Stratum (Plot size: <u>15'x15'</u>)</b>				<b>Prevalence Index worksheet:</b> <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>56</u></td> <td>x 1 = <u>56</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>3</u></td> <td>x 3 = <u>9</u></td> </tr> <tr> <td>FACU species <u>28</u></td> <td>x 4 = <u>112</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>167</u> (A)</td> <td><u>337</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.02</u>	Total % Cover of:	Multiply by:	OBL species <u>56</u>	x 1 = <u>56</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>3</u>	x 3 = <u>9</u>	FACU species <u>28</u>	x 4 = <u>112</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>167</u> (A)	<u>337</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>56</u>	x 1 = <u>56</u>																	
FACW species <u>80</u>	x 2 = <u>160</u>																	
FAC species <u>3</u>	x 3 = <u>9</u>																	
FACU species <u>28</u>	x 4 = <u>112</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>167</u> (A)	<u>337</u> (B)																	
1. <u>Salix exigua</u>	<u>65</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. _____	_____	<input type="checkbox"/>	_____															
3. _____	_____	<input type="checkbox"/>	_____															
4. _____	_____	<input type="checkbox"/>	_____															
5. _____	_____	<input type="checkbox"/>	_____															
		<u>65</u>	= Total Cover															
<b>Herb Stratum (Plot size: <u>5'x5'</u>)</b>				<b>Hydrophytic Vegetation Indicators:</b> + 1 - Rapid Test for Hydrophytic Vegetation + 2 - Dominance Test is >50% + 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
1. <u>Juncus arcticus</u>	<u>15</u>	<input type="checkbox"/>	<u>FACW</u>															
2. <u>Schoenoplectus tabernaemontani</u>	<u>23</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
3. <u>Elymus canadensis</u>	<u>18</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
4. <u>Carex nebrascensis</u>	<u>15</u>	<input type="checkbox"/>	<u>OBL</u>															
5. <u>Typha latifolia</u>	<u>18</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
6. <u>Sorghastrum nutans</u>	<u>10</u>	<input type="checkbox"/>	<u>FACU</u>															
7. _____	_____	<input type="checkbox"/>	_____															
8. _____	_____	<input type="checkbox"/>	_____															
9. _____	_____	<input type="checkbox"/>	_____															
10. _____	_____	<input type="checkbox"/>	_____															
		<u>99</u>	= Total Cover															
<b>Woody Vine Stratum (Plot size: <u>30'x30'</u>)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
1. <u>N/A</u>	_____	<input type="checkbox"/>	_____															
2. _____	_____	<input type="checkbox"/>	_____															
		<u>0</u>	= Total Cover															
% Bare Ground in Herb Stratum <u>1.00</u>																		
Remarks:																		

## SOIL

Sampling Point: Pt. 3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4"	10YR 3/2	100	-	-	-	-	SL	Medium
4-11"	10YR 2/2	93	10YR 7/4	7	C	PL, M	SCL	Gravelly
11-18+"	2.5Y 5/4	100	-	-	-	-	LS	Very gravelly

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- + Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- + Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**Type: N/ADepth (inches): N/AHydric Soil Present? Yes ☒ No ☐

## Remarks:

Prominent redox concentrations in a reduced layer

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- + High Water Table (A2)
- + Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- + Hydrogen Sulfide Odor (C1)
- + Dry-Season Water Table (C2)
- + Oxidized Rhizospheres on Living Roots (C3)
- (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- + FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches):   

Water Table Present? Yes ☒ No ☐ Depth (inches): 10"

Saturation Present? Yes ☒ No ☐ Depth (inches): 6"

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

## Remarks:





Photo 1. Riverine wetland (R5UBF) near the southwest corner of the property, facing northwest showing surface water and well-established rushes, bulrushes, sedges, and cattails.





Photo 2. Thick wetland vegetation along the southern property boundary, Sample Point 3, facing west.





Photo 3. Facing northwest looking at the intermittent stream channel along the western property boundary. A break in wetland vegetation can be seen here, then wetlands beginning again where the thick willows occur. A jurisdictional channel maintains hydrologic connection throughout.





Photo 4. View of the eastern R5UBF wetland showing flowing surface water, a defined stream channel, and the presence of wetland vegetation along the banks and in the channel.