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Consultants in Natural Resources and the Environment

**Natural Resources Assessment  
Grandwood Ranch Development  
North of Higby Road and Colonial Park Drive  
El Paso County, Colorado**

Prepared for—

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January 10, 2019

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## Executive Summary

Grandwood Enterprises, LLC. (Grandwood) retained ERO Resources Corporation (ERO) to provide a natural resources assessment for Grandwood Ranch development north of the intersection of Higby Road and Colonial Park Drive in Monument, El Paso County, Colorado (project area). ERO assessed the project area for potential wetlands and other waters of the U.S., threatened and endangered species habitat, and general wildlife use. Below is a summary of the resources found at the project area and recommendations or future actions necessary based on the current site conditions and federal, state, and local regulations.

The natural resources and associated regulations described in this report are valid as of the date of this report and may be relied upon for the specific use for which it was prepared by ERO under contract to Herebic. Because of their dynamic natures, site conditions and regulations should be reconfirmed by a qualified consultant before relying on this report for a use other than that for which ERO was contracted.

**Wetlands and Other Waters of the U.S.** – Jackson Creek and one unnamed drainage, which flows to Jackson Creek outside the project area, occur in the project area. Jackson Creek is a tributary to the Arkansas River and is considered a jurisdictional water of the U.S., therefore both drainages are assumed jurisdictional. In addition, wetlands associated with these drainages occur in the project area. ***If any work is planned within the drainages or wetlands in the project area, a jurisdictional determination should be requested from the U.S. Army Corps of Engineers (Corps).*** If any work is planned within these drainages, a Section 404 permit would be required from the Corps for the placement of fill or dredge material within wetlands or below the ordinary high water mark. If no work is planned within these drainages, no Corps action is necessary.

**Threatened and Endangered Species** – The project area contains habitat for Preble’s meadow jumping mouse along the drainages. If either of the drainages would be impacted by project activities, ***ERO recommends submitting a habitat assessment to the U.S. Fish and Wildlife Service (Service)*** requesting confirmation the wetlands are not habitat and a presence/absence survey would not be required.

**Migratory Birds** – No active or inactive bird nests were observed during the 2018 site visit; however, the uplands provide potential nesting habitat for ground-nesting bird species, such as western meadowlark, and the cattails provide nesting habitat for red-winged blackbirds.

The Denver Field Office of the U.S. Fish and Wildlife Service (2009) and Colorado Department of Transportation (2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring between April 1 and mid to late August. However, some birds, such as the red-tailed hawk and great horned owl, can nest as early as February or March. Because of variability in the breeding seasons of various bird species, ***ERO recommends a nest survey be conducted within one week prior to construction*** to determine if any active nests are present in the project area so they can be avoided. If active nests are found, any work that would destroy the nests could not be conducted until the birds have vacated the nests.

**Other Wildlife** – As with any human development, wildlife species sensitive to human disturbance are likely to decline in abundance or abandon the area, while other wildlife species adapted to development are likely to increase in abundance.

# Natural Resources Assessment Grandwood Ranch Development North of Higby Road and Colonial Park Drive El Paso County, Colorado

January 10, 2019

## Introduction

Grandwood Enterprises, LLC. retained ERO Resources Corporation (ERO) to provide a natural resources assessment for the Grandwood Ranch development north of the intersection of Higby Road and Colonial Park Drive in Monument, El Paso County, Colorado (project area; Figure 1). On June 1, 2018, Nolan Hahn and Anna Hennage, biologists with ERO, assessed the project area for natural resources (2018 site visit). During this assessment, activities included a review of potential wetlands, identification of potential federally threatened and endangered species habitat, and identification of other natural resources. This report provides information on existing site conditions and resources, as well as current regulatory guidelines related to those resources. ERO assumes the landowner is responsible for obtaining all federal, state, and local permits for construction of the project.

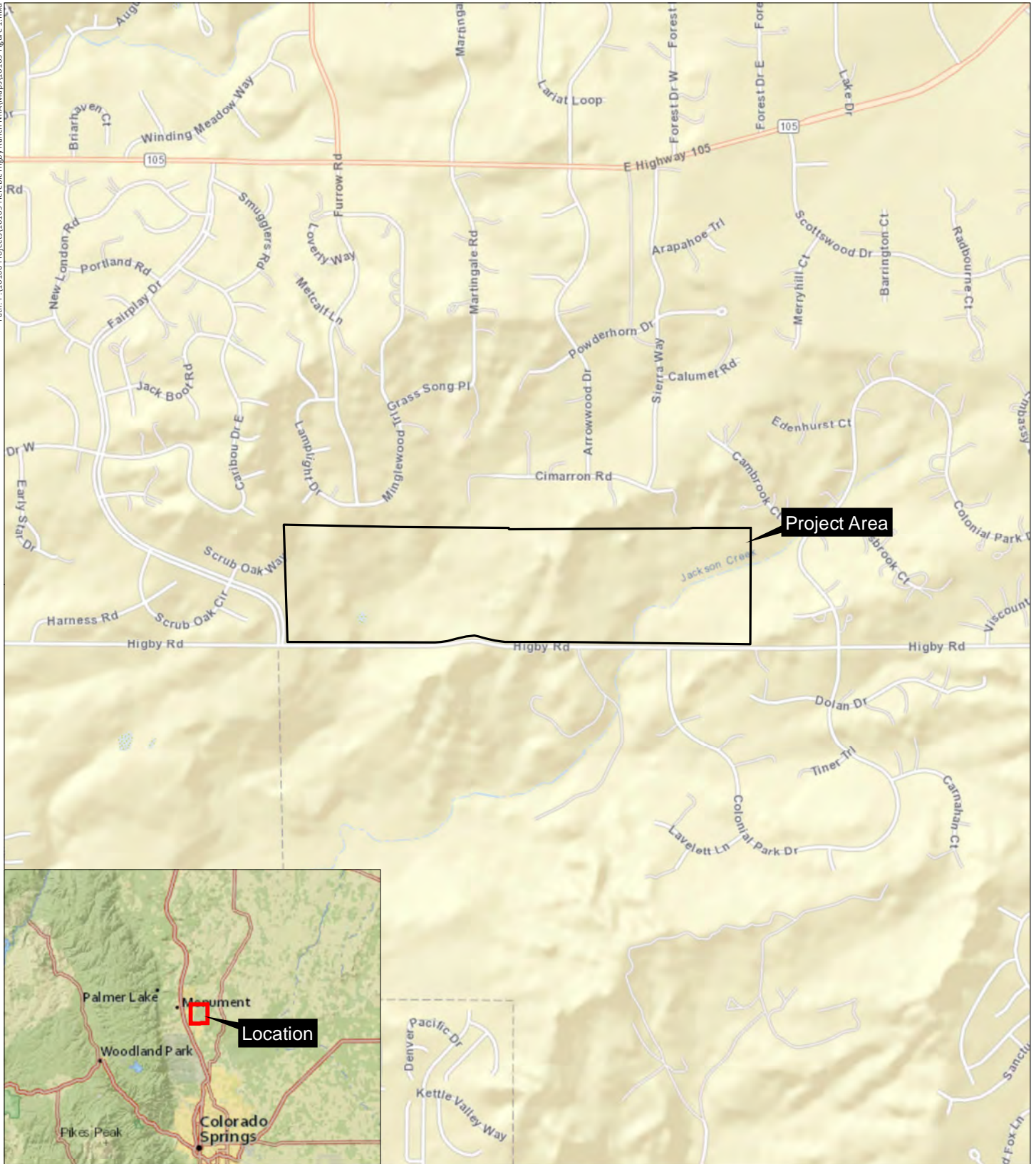
## Project Area Description

The project area is in Section 19, Township 11 South, Range 66 West of the 6th Principal Meridian in El Paso County, Colorado (Figure 1). The UTM coordinates for the approximate center of the project area are 515409mE, 4325689mN, Zone 13 North. The longitude/latitude of the project area is 104.821854°W/39.080177°N. The elevation of the project area is approximately 7,150 to 7,330 feet above sea level. Photo points of the project area are shown on Figure 2 **Error! Reference source not found.**a and Figure 2b and the photo log is included in Appendix A.

The project area is bounded by residential properties to the north, east, and west, and Higby Road to the south (Figure 1 and Figures 2a and 2b). The project area consists of pastureland and upland pine forest Figures 2a and 2b).

The vegetation in the forested portion of the project area is dominated by upland species including ponderosa pine (*Pinus ponderosa*). The upland pasture portion of the project area is dominated by smooth brome (*Bromus inermis*) and field pennycress (*Thlaspi arvense*) (Photos 2 and 5). The wetlands along the two drainages are dominated by cattail (*Typha x glauca*), cloaked bulrush (*Scirpus pallidus*), sandbar willow (*Salix exigua*), and Pennsylvania smartweed (*Persicaria pennsylvanica*).

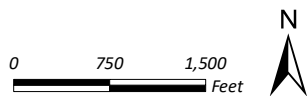
Both drainages originate in the project area and flow south, where Drainage 1 joins Jackson Creek then flows to Monument Creek, a tributary of the Arkansas River.



### Grandwood Ranch

Section 19, T11S, R66W; 6th PM  
 UTM NAD 83: Zone 13N; 515409mE, 4325689mN  
 Longitude 104.821854°W, Latitude 39.080177°N  
 USGS Monument, CO Quadrangle  
 El Paso County, Colorado

### Figure 1 Vicinity Map



Prepared for: Grandwood Enterprises, LLC  
 File: 10169 Figure 1.mxd (GS)  
 January 11, 2019







### Grandwood Ranch

- Data Point
- ➔ Photo Point
- 🍃 Preble's Habitat (9.279 ac)
- 🌊 Wetland (0.605 ac)
- 🌊 Ordinary High Water Mark (0.601 ac)
- 🟡 Project Area Boundary

Image Source: Google Earth©, June 2017



### Figure 2a Existing Conditions

Prepared for: Grandwood Enterprises, LLC  
File: 10169 Figures 2a & 2b.mxd (GS)  
January 11, 2019







### Grandwood Ranch

- Data Point
- ➔ Photo Point
- 🍃 Preble's Habitat (9.279 ac)
- 🌊 Wetland (0.605 ac)
- 🌊 Ordinary High Water Mark (0.601 ac)
- 📏 Project Area Boundary

Image Source: Google Earth©, June 2017

0 60 120 Feet



### Figure 2b Existing Conditions

Prepared for: Grandwood Enterprises, LLC  
File: 10169 Figures 2a & 2b.mxd (GS)  
January 11, 2019



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

### Background

The Clean Water Act (CWA) protects the chemical, physical, and biological integrity of waters of the U.S. The U.S. Army Corps of Engineers (Corps) Regulatory Program administers and enforces Section 404 of the CWA. Under Section 404, a Corps permit is required for the discharge of dredged or fill material into wetlands and other waters of the U.S. (streams, ponds, and other waterbodies). In 2007, the Corps issued guidance in response to the Supreme Court ruling in the consolidated cases of *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* stating that the Corps considers traditionally navigable waters (TNWs), wetlands adjacent to a TNW, and tributaries to TNWs that are relatively permanent waters (RPWs) and their abutting wetlands jurisdictional waters. Other wetlands and waters that are not TNWs or RPWs will require a significant nexus evaluation to determine their jurisdiction. A significant nexus evaluation assesses the flow characteristics and functions of a tributary and its adjacent wetlands to determine if they significantly affect the chemical, physical, or biological integrity of downstream TNWs.

On May 31, 2016, the U.S. Supreme Court concluded that approved jurisdictional determinations are judicially reviewable under the Administrative Procedure Act and, therefore, can be appealed in court. The Corps has recommended that requests for both approved and preliminary jurisdictional determinations be done using guidance outlined in Regulatory Guidance Letter 16-01 and that a jurisdictional form request be completed (Corps 2016). The Corps has indicated that jurisdictional determinations associated with a Section 404 CWA Permit request will preside over stand-alone jurisdictional determination requests. While ERO may provide its opinion on the likely jurisdictional status of wetlands and waters, the Corps makes the final determination.

### Methods

During the 2018 site visit, ERO assessed the project area for potential waters of the U.S., including abutting and adjacent wetlands. Prior to the 2018 site visit, ERO reviewed U.S. Geological Survey (USGS) quadrangle topographic maps and aerial photography to identify mapped streams and areas of open water that could indicate wetlands or waters of the U.S.

In addition to assessing the project area for potential isolated wetlands, jurisdictional wetlands, and other waters of the U.S., ERO conducted a jurisdictional wetland delineation using methods for routine on-site wetland determinations in areas of less than 5 acres as outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). ERO used methods in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (Corps 2010) to record data on vegetation, soils, and hydrology on routine determination forms (Appendix B). Wetlands were determined based on the presence of three wetland indicators: hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland boundaries were determined by a visible change in vegetation community, topographic changes, and other visible distinctions between wetlands and uplands.



The wetland indicator status of plant species was identified using the National Wetland Plant List (Lichvar et al. 2016), taxonomy was determined using *Colorado Flora: Eastern Slope* (Weber and Wittmann 2012), and nomenclature was determined using *The PLANTS Database* (U.S. Department of Agriculture, Natural Resources Conservation Service [USDA, NRCS] 2018a). Wetland locations and classifications were supported by USGS topographic maps, aerial photography, and the USGS Soil Survey (USDA, NRCS 2018b). Wetland classifications were based on a combination of Cowardin et al. (1979) and Brinson (1993). If present, hydric soils were identified using field observation for hydric soil indicators accepted by the Corps. A Munsell soil color chart was used to determine soil color.

Characteristics of a defined streambed, streambank, ordinary high water mark (OHWM), and other erosional features also were identified. The Corps defines “streambed” as “the substrate of the stream channel between the OHWMs. The substrate may be bedrock or inorganic particles that range in size from clay to boulders.” The Corps defines “ordinary high water mark” as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the soil character, destruction of terrestrial vegetation, presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 Code of Federal Regulations (CFR) 328.3(e)).

The boundaries of wetlands and other characteristics of a potential water of the U.S. either were drawn onto aerial photographs or mapped using a Global Positioning System (GPS) unit, based on the wetland characteristics described above. GPS data were differentially corrected using the CompassCom base station. All differential correction was completed using Trimble Pathfinder Office 5.40 software. GPS data were incorporated onto base mapping using ARC Geographic Information Systems software.

To assist the Corps in making a preliminary jurisdictional determination, ERO reviewed the proximity and potential surface water connection of wetlands to known jurisdictional waters of the U.S. using aerial photo interpretation, landowner information, and information from the wetland survey. Potential waters of the U.S., including adjacent wetlands, identified in the project area are shown on Figure 2 and Figures 2a and 2b. Data were collected from various locations in the project area to document the characteristics of uplands and wetlands and the transition areas between them. Each data point was given a label that corresponds to a location shown on Figures 2a and 2b and on routine wetland determination forms (Appendix B). The following sections contain information on potential surface water connections of wetlands and other waters within the project area.

## **Site Conditions and Regulations**

During the 2018 site visit, ERO mapped a total of 0.601 acre of stream channel and 0.605 acre of wetlands (Figure 2 and Figures 2a and 2b).

### **Intermittent Drainages**

Two intermittent drainages (Jackson Creek and Drainage 1) occur in the project area (Photos 1 and 6 through 8). During the 2018 site visit, water was observed to be flowing in both drainages within the project area. Drainage 1 originates within the western portion of the project area and flows south to

Jackson Creek. Drainage 1 is impounded within the project area to form a small pond with a wetland fringe (Photo 6). Jackson Creek originates in the northeastern portion of the project area and flows south to Monument Creek (Photo 1). Wetland vegetation occurs along and within both drainages. Cattail, cloaked bulrush, Pennsylvania smartweed, and sandbar willow dominate the vegetation in the wetlands. Both drainages are shown on the USGS Monument topographic map as intermittent streams. Jackson Creek has a surface water connection to the Arkansas River. The Corps has determined that Jackson Creek is jurisdictional.

## **Wetlands**

### ***Vegetation***

Wetlands occur within Jackson Creek and Drainage 1 (Figure 2 and Figures 2a and 2b). Five data points (DP) were taken during the 2018 site visit. Cattail (obligate wetland), cloaked bulrush (obligate wetland), Pennsylvania smartweed (facultative wetland), and sandbar willow (facultative wetland) are the dominant species in the wetlands. At DP1, DP2, DP3, and DP5, the vegetation met the dominance test for hydrophytic vegetation.

### ***Soils***

Soil data from DP1 revealed silt loam soils with a soil matrix color of 10YR 2/2 with features of 10YR 5/6 to 20 inches. The soils at DP1 met the redox dark surface hydric soil indicator. Soil data from DP3 revealed sandy loam soils with a soil matrix color of 10YR 2/1 to 2 inches and a soil matrix color of 10YR 3/1 with features of 10YR 5/6 from 2 to 20 inches. The soils at DP3 met the sandy redox hydric soil indicator. No soil pit was dug at DP5 due to the data point meeting the rapid test criteria. Soils at DP2 and DP4 consisted of silt loam soils with a matrix color of 10YR 2/2 to a depth of 20 inches. No hydric soil indicators were present at DP2 or DP4.

### ***Hydrology***

The main source of hydrology for the wetlands is saturated soil conditions within 12 inches of the ground surface. Other hydrologic indicators observed in wetlands were surface water, high water table, inundation visible on aerial imagery, geomorphic position, drainage patterns, and the FAC-neutral test. No hydrology indicators were present at DP2 or DP4.

## **Threatened, Endangered, and Candidate Species**

ERO assessed the project area for potential habitat for threatened, endangered, and candidate species under the Endangered Species Act (ESA). Federally threatened and endangered species are protected under the ESA of 1973, as amended (16 United States Code 1531 et seq.). Significant adverse effects on a federally listed species or its habitat require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 or 10 of the ESA. The Service lists several threatened and endangered species with potential habitat in in the project area, or that would be potentially affected by projects in the project area (Table 1).

**Table 1. Federally threatened, endangered, and candidate species potentially found in the project area or potentially affected by projects in the project area.**

Common Name	Scientific Name	Status*	Habitat	Habitat Present or Potential to be Affected by Project?
<b>Mammals</b>				
North American wolverine	<i>Gulo gulo luscus</i>	PT	Subalpine forests above 8,000 feet in elevation	No
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	T	Shrub riparian/wet meadows	Yes
<b>Birds</b>				
Interior least tern**	<i>Sterna antillarum athalassos</i>	E	Sandy/pebble beaches on lakes, reservoirs, and rivers	No habitat and not within the South Platte River watershed
Mexican spotted owl	<i>Strix occidentalis</i>	T	Closed canopy forests in steep canyons	No
Piping plover**	<i>Charadrius melodus</i>	T	Sandy lakeshore beaches and river sandbars	No habitat and not within the South Platte River watershed
Whooping crane**	<i>Grus americana</i>	E	Mudflats around reservoirs and in agricultural areas	No habitat and not within the South Platte River watershed
<b>Fish</b>				
Greenback cutthroat trout	<i>Oncorhynchus clarki stomias</i>	T	Cold, clear, gravel headwater streams and mountain lakes	No
Pallid sturgeon**	<i>Scaphirhynchus albus</i>	E	Large, turbid, free-flowing rivers with a strong current and gravel or sandy substrate	No habitat and not within the South Platte River watershed
<b>Plants</b>				
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	T	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 7,800 feet in elevation	No
Western prairie fringed orchid**	<i>Platanthera praeclara</i>	T	Moist to wet prairies and meadows	No habitat and not within the South Platte River watershed

\*T = Federally Threatened Species, E = Federally Endangered Species, PT = Proposed Threatened Species.

\*\*Water depletions in the South Platte River may affect the species and/or critical habitat in downstream reaches in other counties or states.

Source: Service 2018.

The proposed project would not directly affect the North American wolverine, Mexican spotted owl, or the greenback cutthroat trout because of the lack of habitat in the project area.

The interior least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid are species that are affected by depletions to the Platte River system. Because Jackson Creek is a tributary to the Arkansas River, there would be no depletions to the South Platte River.

Potential habitat for Preble's meadow jumping mouse (Preble's) and Ute ladies'-tresses orchid (ULTO) is generally more prevalent in areas across the Front Range. Because these species are more likely to be addressed by counties and regulatory agencies such as the Corps, a more detailed discussion is provided below.

## **Preble's Meadow Jumping Mouse**

### **Species Background**

Preble's was listed as a threatened species on May 13, 1998. Under existing regulations, either a habitat assessment or a full presence/absence survey for Preble's is required for any habitat-disturbing activity within areas determined to be potential Preble's habitat (generally riparian habitat along streams and ditches along the Colorado Front Range). Typically, Preble's occurs below 7,600 feet in elevation, generally in lowlands with medium to high moisture along permanent or intermittent streams and canals (Meaney et al. 1997). Preble's occurs in low undergrowth consisting of grasses and forbs, in open wet meadows, in riparian corridors near forests, or where multilevel shrubs and low trees provide adequate cover (Service 1999; Meaney et al. 1997).

### **Potential Habitat and Possible Effects**

During the 2018 site visit, ERO assessed the project area for potential Preble's habitat. The riparian area along both Jackson Creek and Drainage 1 is Preble's habitat (Photo 1). Dense stands of sandbar willow shrubs and a well-developed herbaceous understory occur along both drainages and provide the forage and cover that Preble's requires (Photos 3 and 4). The nearest known Preble's capture location is approximately 1.6 miles southeast of the project area along Jackson Creek (Service 2014). In addition, Drainage 1 is listed as critical habitat beginning on the other side of Higby Road from the project area and along Jackson Creek 0.23 mile south of the project area. Because a continuous riparian corridor would allow movement of Preble's between the known capture site and the project area, Preble's may occupy the project area or have potential to move into the project area. During the 2018 site visit, ERO mapped 9.279 acres of likely Preble's habitat along both drainages.

### **Recommendations**

Because of the nearby critical habitat and the well-developed shrub and understory layers, ERO believes the riparian corridors of Drainage 1 and Jackson Creek are Preble's habitat. ERO recommends submitting a habitat assessment to the Service requesting concurrence that mapped habitat within the project area is habitat for Preble's and that the proposed project would not adversely affect the continued existence of Preble's.

## **Ute Ladies'-Tresses Orchid**

### **Species Background**

ULTO is federally listed as threatened. ULTO occurs at elevations below 7,800 feet in moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes where the soil is seasonally saturated within 18 inches of the surface (Service 1992a). This species has also been found along irrigation canals, irrigated meadows, gravel pits, and other human-modified wetlands (Service



2018). Generally, the species occurs where the vegetative cover is relatively open and not overly dense or overgrazed. Once thought to be fairly common in low-elevation riparian areas in the interior western United States, ULTO is now rare (Service 1992a). The species known range is from Nevada to British Columbia. The largest known populations occur in Utah, followed by Colorado (NatureServe 2018).

In Colorado, the Service requires surveys appropriate sites within the 100-year floodplain of the South Platte River, Fountain Creek, and Yampa River and their perennial tributaries, or in any area with habitat in Boulder and Jefferson Counties (Service 1992b). Because ULTO has been found along other stream systems in Colorado since 1992, the Service has expanded the number of counties where surveys are required in suitable habitat (Service 2018). ULTO does not bloom until late July to early September (depending on the year) and timing of surveys must be synchronized with blooming (Service 1992b).

### **Potential Habitat and Recommendations**

ERO assessed the project area for potential ULTO habitat. Because a perennial tributary to the South Platte River does not occur in the project area and the project area is in El Paso County, the site does not fall within the Service's guidelines for ULTO surveys.

## **Other Species of Concern**

### **Raptors and Migratory Birds**

Migratory birds, as well as their eggs and nests, are protected under the Migratory Bird Treaty Act (MBTA). The MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. While destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal and fully prosecutable under the MBTA (Service 2003). The regulatory definition of a take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.

Under the MBTA, the Service may issue nest depredation permits, which allow a permittee to remove an active nest. The Service, however, issues few permits and only under specific circumstances, usually related to human health and safety. Obtaining a nest depredation permit is unlikely and involves a process that takes, at a minimum, 8 to 12 weeks. The best way to avoid a violation of the MBTA is to remove vegetation outside of the active breeding season, which typically falls between March and August, depending on the species. Public awareness of the MBTA has grown in recent years, and most MBTA enforcement actions are the result of a concerned member of the community reporting a violation.

### **Potential Habitat and Effects**

No bird nests were observed in the project area during the 2018 site visit; however, a full nest survey was not conducted. Although none were observed during the 2018 site visit, ground-nesting bird nests are difficult to detect and may be present in the uplands in the project area. The breeding season for

most birds in Colorado is March through August, with the exception of a few species that begin breeding in February, such as great-horned owls.

### **Recommendations**

Although no nests were observed during the 2018 site visit, ground-nesting bird nests are difficult to detect and may be present in the uplands in the project area. To avoid destruction of potential ground-nesting migratory bird nests, grassland vegetation should be removed outside of the April 1 through August 31 breeding season.

Both the Denver Field Office of the Service (2009) and the Colorado Department of Transportation (2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring between April 1 and mid to late August. However, a few species such as bald eagles, great horned owls, and red-tailed hawks can nest as early as December (eagles) or late February (owls and red-tailed hawks). Because of variability in the breeding seasons, ERO recommends that a nest survey be conducted within one week prior to construction to determine if any active nests are present in the project area so that they can be avoided. Additional nest surveys within the nesting season may also be warranted to identify active nesting species that may present additional development timing restrictions (e.g., eagles or red-tailed hawks).

If active nests are identified within or near the project area, activities that would directly affect the nests should be restricted. Habitat-disturbing activities (e.g., tree removal, grading, scraping, and grubbing) should be conducted in the nonbreeding season to avoid disturbing active nests, or to avoid a “take” of the migratory bird nests within the project area. Nests can be removed during the nonbreeding season, September 1 through March 31, to preclude future nesting and avoid violations of the MBTA; however, nests may not be collected under MBTA regulations. There is no process for removing nests during the nonbreeding season. If the construction schedule does not allow vegetation removal outside of the breeding season, a nest survey should be conducted within one week prior to vegetation removal to determine if the nests are active and by which species. If active nests are found, any work that would destroy the nests or cause the birds to abandon young in the next cannot be conducted until the birds have vacated the nests.

### **Other Wildlife**

As with any human development, wildlife species sensitive to human disturbance are likely to decline in abundance or abandon the area, while other wildlife species adapted to development are likely to increase in abundance. Species likely to decline include some raptors and possibly coyotes. Species likely to increase include red fox, raccoon, and great horned owl. Overall, surrounding and continuing development contributes to a decline in the number and diversity of wildlife species nearby and to a change in species composition to favor species that adapt better to human disturbance.

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PHOTO LOG  
2018 GRANDWOOD RANCH  
EL PASO COUNTY, CO  
JUNE 1, 2018



**Photo 1** - Overview of wetland and likely Preble's habitat at the head of Jackson Creek in the northeastern part of the project area. View is to the southwest.



**Photo 2** - Overview of uplands in the northeastern part of the project area. View is to the northeast.



PHOTO LOG  
2018 GRANDWOOD RANCH  
EL PASO COUNTY, CO  
JUNE 1, 2018



**Photo 3** - Overview of Preble's habitat in the eastern part of the project area. View is to the south.



**Photo 4** - Overview of Preble's habitat in the eastern part of the project area. View is to the west.



PHOTO LOG  
2018 GRANDWOOD RANCH  
EL PASO COUNTY, CO  
JUNE 1, 2018



**Photo 5** - Overview of uplands in the western part of the project area. View is to the northeast.



**Photo 6** - Overview of wetland and pond on Drainage 1 in the southwestern part of the project area. View is to the southwest.



PHOTO LOG  
2018 GRANDWOOD RANCH  
EL PASO COUNTY, CO  
JUNE 1, 2018



**Photo 7** - Overview of Drainage 1 in the southwestern part of the project area. View is to the south.



**Photo 8** - Overview of wetland in Drainage 1 in the southwestern part of the project area. View is to the south.



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

Project/Site: Herebic Higby Ranch City/County: El Paso, Co Sampling Date: 6/1/18  
 Applicant/Owner: \_\_\_\_\_ State: CO Sampling Point: DP-1  
 Investigator(s): NHH, GAH Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 0.5  
 Subregion (LRR): LRR E Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks:	

### VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or 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>100.0%</u> (A/B)																																
2. _____																																					
3. _____																																					
4. _____																																					
=Total Cover																																					
Sapling/Shrub Stratum	(Plot size: _____)				<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td></td> <td style="text-align: right;">Multiply by:</td> <td></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;"><u>90</u></td> <td>x 1 =</td> <td style="text-align: center;"><u>90</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;"><u>15</u></td> <td>x 2 =</td> <td style="text-align: center;"><u>30</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;"><u>0</u></td> <td>x 3 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;"><u>0</u></td> <td>x 4 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;"><u>0</u></td> <td>x 5 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;"><u>105</u> (A)</td> <td></td> <td style="text-align: center;"><u>120</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =</td> <td></td> <td style="text-align: center;"><u>1.14</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>90</u>	x 1 =	<u>90</u>	FACW species	<u>15</u>	x 2 =	<u>30</u>	FAC species	<u>0</u>	x 3 =	<u>0</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>105</u> (A)		<u>120</u> (B)	Prevalence Index = B/A =			<u>1.14</u>
Total % Cover of:		Multiply by:																																			
OBL species	<u>90</u>	x 1 =	<u>90</u>																																		
FACW species	<u>15</u>	x 2 =	<u>30</u>																																		
FAC species	<u>0</u>	x 3 =	<u>0</u>																																		
FACU species	<u>0</u>	x 4 =	<u>0</u>																																		
UPL species	<u>0</u>	x 5 =	<u>0</u>																																		
Column Totals:	<u>105</u> (A)		<u>120</u> (B)																																		
Prevalence Index = B/A =			<u>1.14</u>																																		
1. <u>Salix exigua</u>		<u>5</u>	Yes	FACW																																	
2. _____																																					
3. _____																																					
4. _____																																					
5. _____																																					
=Total Cover																																					
Herb Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Indicators:</b> _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 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) _____ 5 - Wetland Non-Vascular Plants <sup>1</sup> _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
1. <u>Typha X glauca</u>		<u>50</u>	Yes	OBL																																	
2. <u>Scirpus pallidus</u>		<u>30</u>	Yes	OBL																																	
3. <u>Juncus balticus</u>		<u>10</u>	No	FACW																																	
4. <u>Epilobium palustre</u>		<u>10</u>	No	OBL																																	
5. _____																																					
6. _____																																					
7. _____																																					
8. _____																																					
9. _____																																					
10. _____																																					
11. _____																																					
=Total Cover																																					
Woody Vine Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																																
1. _____																																					
2. _____																																					
=Total Cover																																					
% Bare Ground in Herb Stratum _____																																					
Remarks:																																					

**SOIL**

Sampling Point: DP-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>		
0-20	10YR 2/2	80	10YR 5/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

<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.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
This data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1</u> Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

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

Remarks:

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

Project/Site: Herebic Higby Ranch City/County: El Paso, Co Sampling Date: 6/1/18  
 Applicant/Owner: \_\_\_\_\_ State: CO Sampling Point: DP-2  
 Investigator(s): NHH, GAH Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 0.1  
 Subregion (LRR): LRR E Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u>
Remarks:	

### VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																
2. _____																																					
3. _____																																					
4. _____																																					
=Total Cover																																					
Sapling/Shrub Stratum	(Plot size: _____)				<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td></td> <td style="text-align: right;">Multiply by:</td> <td></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;"><u>0</u></td> <td>x 1 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;"><u>0</u></td> <td>x 2 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;"><u>90</u></td> <td>x 3 =</td> <td style="text-align: center;"><u>270</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;"><u>0</u></td> <td>x 4 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;"><u>10</u></td> <td>x 5 =</td> <td style="text-align: center;"><u>50</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;"><u>100</u> (A)</td> <td></td> <td style="text-align: center;"><u>320</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =</td> <td></td> <td style="text-align: center;"><u>3.20</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>0</u>	x 2 =	<u>0</u>	FAC species	<u>90</u>	x 3 =	<u>270</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>10</u>	x 5 =	<u>50</u>	Column Totals:	<u>100</u> (A)		<u>320</u> (B)	Prevalence Index = B/A =			<u>3.20</u>
Total % Cover of:		Multiply by:																																			
OBL species	<u>0</u>	x 1 =	<u>0</u>																																		
FACW species	<u>0</u>	x 2 =	<u>0</u>																																		
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Prevalence Index = B/A =			<u>3.20</u>																																		
1. _____																																					
2. _____																																					
3. _____																																					
4. _____																																					
5. _____																																					
=Total Cover																																					
Herb Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Indicators:</b> _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 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) _____ 5 - Wetland Non-Vascular Plants <sup>1</sup> _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
1. <u>Agrostis gigantea</u>		80	Yes	FAC																																	
2. <u>Thlaspi arvense</u>		10	No	UPL																																	
3. <u>Barbarea vulgaris</u>		10	No	FAC																																	
4. _____																																					
5. _____																																					
6. _____																																					
7. _____																																					
8. _____																																					
9. _____																																					
10. _____																																					
11. _____																																					
100 =Total Cover																																					
Woody Vine Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																																
1. _____																																					
2. _____																																					
=Total Cover																																					
% Bare Ground in Herb Stratum _____																																					
Remarks:																																					

**SOIL**

Sampling Point: DP-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>		
0-20	10YR 2/2	100					Loamy/Clayey	

<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.)			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
---	---

Remarks:  
 This data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Herebic Higby Ranch City/County: El Paso, Co Sampling Date: 6/1/18  
 Applicant/Owner: \_\_\_\_\_ State: CO Sampling Point: DP-3  
 Investigator(s): NHH, GAH Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): LRR E Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks:	

## VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. _____																					
3. _____																					
4. _____																					
=Total Cover																					
Sapling/Shrub Stratum	(Plot size: _____)				<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>70</u></td> <td>x 1 = <u>70</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>160</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.52</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>70</u>	x 1 = <u>70</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>160</u> (B)	Prevalence Index = B/A = <u>1.52</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>70</u>	x 1 = <u>70</u>																				
FACW species <u>20</u>	x 2 = <u>40</u>																				
FAC species <u>10</u>	x 3 = <u>30</u>																				
FACU species <u>5</u>	x 4 = <u>20</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>105</u> (A)	<u>160</u> (B)																				
Prevalence Index = B/A = <u>1.52</u>																					
1. <u>Prunus virginiana</u>		<u>5</u>	Yes	FACU																	
2. _____																					
3. _____																					
4. _____																					
5. _____																					
=Total Cover																					
Herb Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Indicators:</b> _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 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) _____ 5 - Wetland Non-Vascular Plants <sup>1</sup> _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Typha X glauca</u>		<u>70</u>	Yes	OBL																	
2. <u>Persicaria pensylvanica</u>		<u>20</u>	Yes	FACW																	
3. <u>Barbarea vulgaris</u>		<u>10</u>	No	FAC																	
4. _____																					
5. _____																					
6. _____																					
7. _____																					
8. _____																					
9. _____																					
10. _____																					
11. _____																					
=Total Cover																					
Woody Vine Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																
1. _____																					
2. _____																					
=Total Cover																					
% Bare Ground in Herb Stratum _____																					
Remarks:																					

**SOIL**

Sampling Point: DP-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>		
0-2	10YR 2/1	100					Sandy	
2-20	10YR 3/1	80	10YR 5/6	20	C	M	Sandy	Prominent redox concentrations

<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.)			Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)		<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)		<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)			
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)			
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	<input type="checkbox"/> Redox Depressions (F8)			
<input type="checkbox"/> Sandy Gleyed Matrix (S4)				

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
This data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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

Project/Site: Herebic Higby Ranch City/County: El Paso, Co Sampling Date: 6/1/18  
 Applicant/Owner: \_\_\_\_\_ State: CO Sampling Point: DP-4  
 Investigator(s): NHH, GAH Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): LRR E Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u>
Remarks: _____	

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

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																																
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
=Total Cover																																				
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td>x 1 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>0</u></td> <td>x 2 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>10</u></td> <td>x 3 =</td> <td align="center"><u>30</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>0</u></td> <td>x 4 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>100</u></td> <td>x 5 =</td> <td align="center"><u>500</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>110</u> (A)</td> <td></td> <td align="center"><u>530</u> (B)</td> </tr> <tr> <td align="right" colspan="4">Prevalence Index = B/A = <u>4.82</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>0</u>	x 2 =	<u>0</u>	FAC species	<u>10</u>	x 3 =	<u>30</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>100</u>	x 5 =	<u>500</u>	Column Totals:	<u>110</u> (A)		<u>530</u> (B)	Prevalence Index = B/A = <u>4.82</u>			
Total % Cover of:		Multiply by:																																		
OBL species	<u>0</u>	x 1 =	<u>0</u>																																	
FACW species	<u>0</u>	x 2 =	<u>0</u>																																	
FAC species	<u>10</u>	x 3 =	<u>30</u>																																	
FACU species	<u>0</u>	x 4 =	<u>0</u>																																	
UPL species	<u>100</u>	x 5 =	<u>500</u>																																	
Column Totals:	<u>110</u> (A)		<u>530</u> (B)																																	
Prevalence Index = B/A = <u>4.82</u>																																				
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
=Total Cover																																				
<u>Herb Stratum</u> (Plot size: _____)				<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) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
1. <u>Bromus inermis</u>	70	Yes	UPL																																	
2. <u>Thlaspi arvense</u>	30	Yes	UPL																																	
3. <u>Cirsium arvense</u>	10	No	FAC																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
10. _____	_____	_____	_____																																	
11. _____	_____	_____	_____																																	
110 =Total Cover																																				
<u>Woody Vine Stratum</u> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>																																
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
=Total Cover																																				
% Bare Ground in Herb Stratum _____																																				
Remarks: _____																																				

**SOIL**

Sampling Point: DP-4

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>		
0-20	10YR 2/2	100					Loamy/Clayey	

<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.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:  
This data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Herebic Higby Ranch City/County: El Paso, Co Sampling Date: 6/1/18  
 Applicant/Owner: \_\_\_\_\_ State: CO Sampling Point: DP-5  
 Investigator(s): NHH, GAH Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): Channel Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): LRR E Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks:	

### VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____																					
3. _____																					
4. _____																					
_____ =Total Cover																					
Sapling/Shrub Stratum	(Plot size: _____)				<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>100</u></td> <td>x 1 = <u>100</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>100</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>100</u>	x 1 = <u>100</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>100</u> (B)	Prevalence Index = B/A = <u>1.00</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>100</u>	x 1 = <u>100</u>																				
FACW species <u>0</u>	x 2 = <u>0</u>																				
FAC species <u>0</u>	x 3 = <u>0</u>																				
FACU species <u>0</u>	x 4 = <u>0</u>																				
UPL species <u>0</u>	x 5 = <u>0</u>																				
Column Totals: <u>100</u> (A)	<u>100</u> (B)																				
Prevalence Index = B/A = <u>1.00</u>																					
1. _____																					
2. _____																					
3. _____																					
4. _____																					
_____ =Total Cover																					
Herb Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Typha X glauca</u>		100	Yes	OBL																	
2. _____																					
3. _____																					
4. _____																					
5. _____																					
6. _____																					
7. _____																					
8. _____																					
9. _____																					
10. _____																					
11. _____																					
_____ =Total Cover																					
Woody Vine Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																
1. _____																					
2. _____																					
_____ =Total Cover																					
% Bare Ground in Herb Stratum _____																					
Remarks:																					

**SOIL**

Sampling Point: DP-5

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>		

<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.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
This data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016. No soil pit was dug due to Vegetation and Hydrology meeting the Rapid Test.

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3</u> Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Saturation Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:



February 18, 2019

Drue DeBerry  
U.S. Fish and Wildlife Service  
Colorado Field Office  
Denver Federal Center (MS 65412)  
PO Box 25486  
Denver, Colorado 80225

Re: Threatened and Endangered Species Habitat Assessment— Grandwood Ranch  
Development Preble's Endangered Species Assessment, El Paso County, Colorado

Dear Mr. DeBerry:

ERO Resources Corporation (ERO), on behalf of Grandwood Enterprises, LLC, is requesting technical assistance under the Endangered Species Act (ESA) regarding federally listed threatened, endangered, and candidate (T&E) species for the construction of Grandwood Ranch Development (project) along Jackson Creek in El Paso County, Colorado.

## Background

Grandwood Enterprises, LLC retained ERO to conduct a habitat evaluation for T&E species for Grandwood Ranch Development located north of the intersection of Higby Road and Colonial Park Drive in Monument, El Paso County, Colorado (project area; Figure 1). On June 1, 2018, Nolan Hahn and Anna Hennage, biologists with ERO, surveyed the project area for T&E species and natural resources (2018 site visit).

The project must comply with the Endangered Species Act (ESA) by ensuring that the project does not have significant adverse impacts on federally listed threatened or endangered species. Preble's meadow jumping mouse (Preble's) is listed as threatened under the ESA and has been captured in nearby areas of the South Platte River.

## Federal Nexus

There is a federal nexus under U.S. Army Corps of Engineers (Corps) regulations. ERO evaluated the area for the presence of wetlands following Corps methodology and determined that Jackson Creek and its surrounding wetlands are considered jurisdictional waters of the U.S.

Denver  
1842 Clarkson Street  
Denver, CO 80218  
303.830.1188

Durango  
1015 ½ Main Avenue  
Durango, CO 81301  
970.422.2136

Hotchkiss  
P.O. Box 932  
161 South 2nd Street  
Hotchkiss, CO 81419  
970.872.3020

Idaho  
4001 East Main Street  
Emmett, ID 83617  
208.365.7684

[www.eroresources.com](http://www.eroresources.com)

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Natural Resources  
and the Environment

## General Description of Project Area

### Project Location

The project area is in Section 19, Township 11 South, Range 66 West of the 6th Principal Meridian in El Paso County, Colorado (Figure 1). The UTM coordinates for the approximate center of the project area are 515409mE, 4325689mN, Zone 13 North. The longitude/latitude of the project area is 39.080177°N/104.821854°W. The elevation of the project area is approximately 7,150 to 7,330 feet above sea level.

The project area is bounded by residential properties to the north, east, and west, and Higby Road to the south. The project area consists of pastureland and upland pine forest (Figures 2a and 2b).

### Site Description

The vegetation in the forested portion of the project area is dominated by upland species including ponderosa pine (*Pinus ponderosa*). The upland pasture portion of the project area is dominated by smooth brome (*Bromus inermis*) and field pennycress (*Thlaspi arvense*) (Photos 1 and 2). The wetlands along the two drainages (Drainage 1 and Jackson Creek; Figures 2a and 2b) are dominated by cattail (*Typha x glauca*), cloaked bulrush (*Scirpus pallidus*), sandbar willow (*Salix exigua*), and Pennsylvania smartweed (*Persicaria pennsylvanica*).

Both drainages originate in the project area and flow south, where Drainage 1 joins Jackson Creek then flows to Monument Creek, a tributary of the Arkansas River.

## Best Management Practices (BMPs) Incorporated as Part of the Project

The project will follow BMPs from the U.S. Fish and Wildlife Service (Service 2013).

- Preble's habitat will be completely avoided through project design.
- Access to areas containing wetlands and Preble's habitat will be prohibited.
- The Contractor shall limit construction-related hauling activities to the access roads as defined and shall use the same path to enter and exit the project site.
- Before construction, work areas will be stabilized in a manner to prevent or minimize soil erosion.
- The Contractor shall protect the surrounding area, Drainage 1, and Jackson Creek, from siltation. This will be accomplished by using silt fence and/or other measures as necessary. The Contractor shall repair all damage to erosion control measures in the construction area due to rain, hail, and snow storms.

## Endangered Species Act Compliance

On June 1, 2018, Nolan Hahn and Anna Hennage, biologists with ERO, assessed the project area (2018 site visit) for suitable habitat for T&E species protected under the ESA. The



Service lists eleven T&E species as potentially occurring in or potentially impacted by projects in El Paso County; habitat in the project area falls within Service habitat or survey guidelines for two of those species (Table 1).

**Table 1. T&E species potentially found in El Paso County or potentially impacted by projects in El Paso County.**

Common Name	Scientific Name	Status*	Habitat	Habitat Present
<b>Mammals</b>				
North American Wolverine	<i>Gulo luscus</i>	PT	Boreal forests, tundra, and western mountains near rock crops and conifer stands	No
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	T	Shrub riparian/wet meadows	Occupied habitat present in floodplain.
<b>Birds</b>				
Interior least tern**	<i>Sterna antillarum athalassos</i>	E	Sandy/pebble beaches on lakes, reservoirs, and rivers	No habitat and no depletions
Mexican spotted owl	<i>Strix occidentalis</i>	T	Closed-canopy forests in steep canyons	No
Piping plover**	<i>Charadrius melodus</i>	T	Sandy lakeshore beaches and river sandbars	No habitat and no depletions
Whooping crane**	<i>Grus americana</i>	E	Mudflats around reservoirs and in agricultural areas	No habitat and no depletions
<b>Fish</b>				
Greenback cutthroat trout	<i>Oncorhynchus clarki stomias</i>	T	Gravelly headwater streams or mountain lakes	No
Pallid sturgeon**	<i>Scaphirhynchus albus</i>	E	Large, turbid, free-flowing rivers with a strong current and gravel or sandy substrate	No habitat and no depletions
<b>Insects</b>				
Pawnee montane skipper	<i>Hesperia leonardus montana</i>	T	Open ponderosa pine woodlands (6,000 to 7,500 feet); requires blue grama and prairie gayfeather	No
<b>Plants</b>				
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	T	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 7,800 feet in elevation	No, site conditions not conducive to establishment of this species
Western prairie fringed orchid**	<i>Platanthera praeclara</i>	T	Moist to wet prairies and meadows	No habitat and no depletions

\*T = Federally Threatened Species, E = Federally Endangered Species, PT = Proposed Threatened Species.

\*\*Water depletions in the South Platte River may affect the species or critical habitat in downstream reaches in other counties or states.

Source: Service 2019.

There is no likelihood for the proposed project to impact the north American wolverine, Mexican spotted owl, greenback cutthroat trout, or Pawnee montane skipper due to lack of habitat in the project area. The interior least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid are species that are affected by continued or ongoing water depletions to the Platte River system. Because the project would avoid all waters of the U.S. and would not require a federal action, the project would not require Section 7 depletions consultation.

Because the project area falls within survey guidelines for Preble's and Ute ladies'-tresses orchid (*Spiranthes diluvialis* or ULTO) ERO assessed the project area for suitable habitat for these species. Although the ESA does not apply to take of plants incidental to otherwise lawful activities, ERO evaluated impacts of the project on ULTO.

### **Preble's Meadow Jumping Mouse**

#### ***Species Background***

Preble's was listed as a threatened species on May 13, 1998. Under existing regulations, either a habitat assessment or a full presence/absence survey for Preble's is required for any habitat-disturbing activity within areas determined to be potential Preble's habitat (generally riparian habitat along streams and ditches along the Colorado Front Range). Typically, Preble's occurs below 7,600 feet in elevation, and generally in lowlands with medium to high moisture along permanent or intermittent streams and canals (Meaney et al. 1997). Preble's occurs in low undergrowth consisting of grasses and forbs, in open wet meadows, in riparian corridors near forests, or where multilevel shrubs and low trees provide adequate cover (Service 1999; Meaney et al. 1997).

#### **Potential Habitat and Possible Effects**

During the 2018 site visit, ERO assessed the project area for potential Preble's habitat. The riparian area along both Jackson Creek and Drainage 1 is Preble's habitat (Photo 3). Dense stands of sandbar willow shrubs and a well-developed herbaceous understory occur along both drainages and provide the forage and cover that Preble's requires (Photos 4 and 5). The nearest known Preble's capture location is approximately 1.6 miles southeast of the project area along Jackson Creek (Service 2014). In addition, Drainage 1 is listed as critical habitat beginning on the south side of Higby Road adjacent the project area and along Jackson Creek 0.23 mile south of the project area. Because a continuous riparian corridor that would allow movement of Preble's between the known capture site and the project area is present, Preble's may occupy the project area or have potential to move into the project area. During the 2018 site visit, ERO mapped 9.279 acres of likely Preble's habitat along both drainages.

#### ***Rationale for Excluding the Project Area from Needing an Incidental Take Permit Under Section 10 (a)(1)(B) of the ESA***

Because the project area is considered occupied Preble's habitat, consultation with the Service is required.

Based on guidance from the Department of the Interior (DOI) Principal Deputy Director (DOI 2018), it is ERO's professional opinion that the project would not result in "take" of a listed species, and application for an incidental take permit (ITP) under Section 10 (a)(1)(B) of the ESA is not appropriate for the project. ERO has reviewed the guidance and completed the questionnaire to help decide on the need for an ITP (provided below).

1. Are there ESA listed species present in the area where your activity will occur or will they be present at some point in the duration of your activity?

*Answer: Yes*

2. Is it likely that any of these listed species will be exposed to your activities (or the results of your activity) during any of the various phases of your activity (construction, operation, maintenance, etc.)?

*Answer: Yes*

3. Will that exposure likely result in any of the following actions to the listed species: pursuing, hunting, shooting, wounding, killing, capturing, or collecting or attempting to engage in any such conduct?

*Answer: No*

4. Is your activity likely to harass a listed species?

- Will your activity, through an intentional or negligent act of omission, is likely to annoy the listed species to such an extent as to cause an injury to the species by **significantly disrupting normal behavior patterns** (e.g., breeding, feeding or sheltering, etc.).

*Answer: No, access would be on grassland vegetation areas existing roads and all staging would be outside of occupied habitat. BMPs would be implemented to avoid any significant disruption of normal behavior patterns by preventing or minimizing indirect impacts of sedimentation or soil erosion, and vehicle access.*

5. Is your activity likely to result in an act that actually injures or kills a listed species?

*Answer: No, all disturbance would be restricted to grassland vegetation communities that do not provide protective sheltering habitat for day-resting Preble's. Vehicle travel would be restricted to existing roads and travel overland for positioning the construction equipment would be in grassland vegetation communities that do not provide protective sheltering habitat.*

6. Is your activity likely to harm a listed species through habitat modification (yes to all three questions below)?

- a) Is the activity likely to result in **significant** habitat modification or degradation? *Answer: No, all habitat will be avoided.*

- b) Will the modification or degradation **significantly** impair essential behavior patterns, including breeding, feeding, or sheltering? *Answer: No, see response to question 5.*

- c) As a result of a. and b. above, is it likely there will be **an actual injury or death** to a listed species? *Answer: No.*

Additional voluntary conservation measures to avoid take of Preble's:

- Access to the project area would be on grassland vegetation areas, existing roads and all staging would be outside of occupied habitat.
- BMPs would be implemented to avoid any significant disruption of normal behavior patterns by preventing or minimizing indirect impacts of sedimentation or soil erosion, and vehicle access
- All disturbance would be restricted to grassland vegetation communities that do not provide protective sheltering habitat for day-resting Preble's

ERO concludes that building the Grandwood Ranch development in upland vegetation and completely avoiding direct impacts and minimizing indirect impacts on Preble's habitat would not adversely impact Preble's or Preble's habitat and does not result in take.

### **Recommendations**

Because of the nearby critical habitat and the well-developed shrub and understory layers, ERO believes the riparian corridors of Drainage 1 and Jackson Creek are Preble's habitat. ERO recommends submitting a habitat assessment to the Service requesting concurrence that mapped habitat within the project area is habitat for Preble's and that the proposed project would not adversely impact the continued existence of Preble's.

## **Ute Ladies'-Tresses Orchid**

### **Species Background**

ULTO is federally listed as threatened. ULTO occurs at elevations below 7,800 feet in moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes where the soil is seasonally saturated within 18 inches of the surface (Service 1992a). This species has also been found along irrigation canals, irrigated meadows, gravel pits, and other human-modified wetlands (Service 2019). Generally, ULTO occurs where the vegetative cover is relatively open and not overly dense or overgrazed. Once thought to be fairly common in low-elevation riparian areas in the interior western United States, ULTO is now rare (Service 1992a). The species known range is from Nevada to British Columbia. The largest known populations occur in Utah, followed by Colorado (NatureServe 2019).

In Colorado, the Service requires surveys of appropriate sites within the 100-year floodplain of the South Platte River, Fountain Creek, and Yampa River, and their perennial tributaries, or in any area with habitat in Boulder and Jefferson Counties (Service 1992b). Because ULTO has been found along other stream systems in Colorado since 1992, the Service has expanded the number of counties where surveys are required in suitable habitat (Service 2019). ULTO does not bloom until late July to early September (depending on the year) and timing of surveys must be synchronized with blooming (Service 1992b).

### **Rationale for Excluding the Project Area as Potential ULTO Habitat**

ERO assessed the project area for potential ULTO habitat. The dense herbaceous vegetation and ephemerality of Drainage 1 and Jackson Creek makes the project area unsuitable habitat for ULTO.

### **Conclusion**

Because of the nearby critical habitat and the well-developed shrub and understory layers, ERO believes the riparian corridors of Drainage 1 and Jackson Creek within the project area are Preble's habitat. The project must comply with the ESA by ensuring that the project does not have significant adverse impacts on federally listed threatened or endangered species. To ensure that the project will not have significant adverse impacts on Preble's habitat the following BMPs will be enforced:

- Preble's habitat will be completely avoided through project design.
- Access to areas containing wetlands and Preble's habitat will be prohibited.
- The Contractor shall limit construction-related hauling activities to the access roads as defined and shall use the same path to enter and exit the project site.
- Before construction, work areas will be stabilized in a manner to prevent or minimize soil erosion.
- The Contractor shall protect the surrounding area, Drainage 1, and Jackson Creek, from siltation. This will be accomplished by using silt fence and/or other measures as necessary. The Contractor shall repair all damage to erosion control measures in the construction area due to rain, hail, and snow storms.
- Waste materials shall be removed and disposed of off-site.

### **References**

United States Department of Interior (DOI) 2018. Guidance on trigger for an incidental take permit under section 10 (a)(1)(B) of the Endangered Species Act where occupied habitat or potentially occupied habitat is being modified. Memorandum from Principal Deputy Director in Reply to FWS/AES/067974. April 26.

Meaney, C.A., A. Deans, N.W. Clippenger, M. Rider, N. Daly, and M. O'Shea-Stone. 1997. Third year survey for Preble's meadow jumping mouse (*Zapus hudsonius prebleii*) in Colorado. Under contract to Colorado Division of Wildlife. Boulder, CO.

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<http://www.natureserve.org/explorer/servlet/NatureServe>.

U.S. Fish and Wildlife Service (Service). 1992a. Endangered and Threatened Wildlife and Plants: Final Rule to List the Plant *Spiranthes diluvialis* (Ute ladies'-tresses) as a Threatened Species. Federal Register 50 CFR Part 17, Volume 57, No. 12, Pages 2048-2054. January 17.

U.S. Fish and Wildlife Service (Service). 1992b. Interim Survey Requirements for *Spiranthes diluvialis*.

- U.S. Fish and Wildlife Service (Service). 1999. Survey Guidelines for Preble's Meadow Jumping Mouse. USFWS, Colorado Field Office. Last revised April 2004.
- U.S. Fish and Wildlife Service (Service). 2013. Recommended Conservation Measures to avoid and Minimize Impact to the Preble's jumping mouse (*Zapus hudsonius preblei*), Ute Ladies'-tresses orchid (*Spiranthes diluvialis*), and the Colorado Butterfly plant (*Guara neomexicana* spp. *coloradensis*).
- U.S. Fish and Wildlife Service (Service). 2014. Preble's meadow jumping mouse (*Zapus hudsonius preblei*) trapping database for scientific collection activities conducted under Section 10 of the Endangered Species Act. Colorado Ecological Services Field Office. Denver.
- U.S. Fish and Wildlife Service (Service). 2019. Endangered, Threatened, Proposed and Candidate Species, Colorado Counties. <http://ecos.fws.gov/ipac/>. Last accessed June 13, 2018.