

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—

Grandwood Enterprises, LLC 270 Lodgepole Way Monument, Colorado 80132

Prepared by—

ERO Resources Corporation 1842 Clarkson Street Denver, Colorado 80218 (303) 830-1188 ERO Project #10169

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.

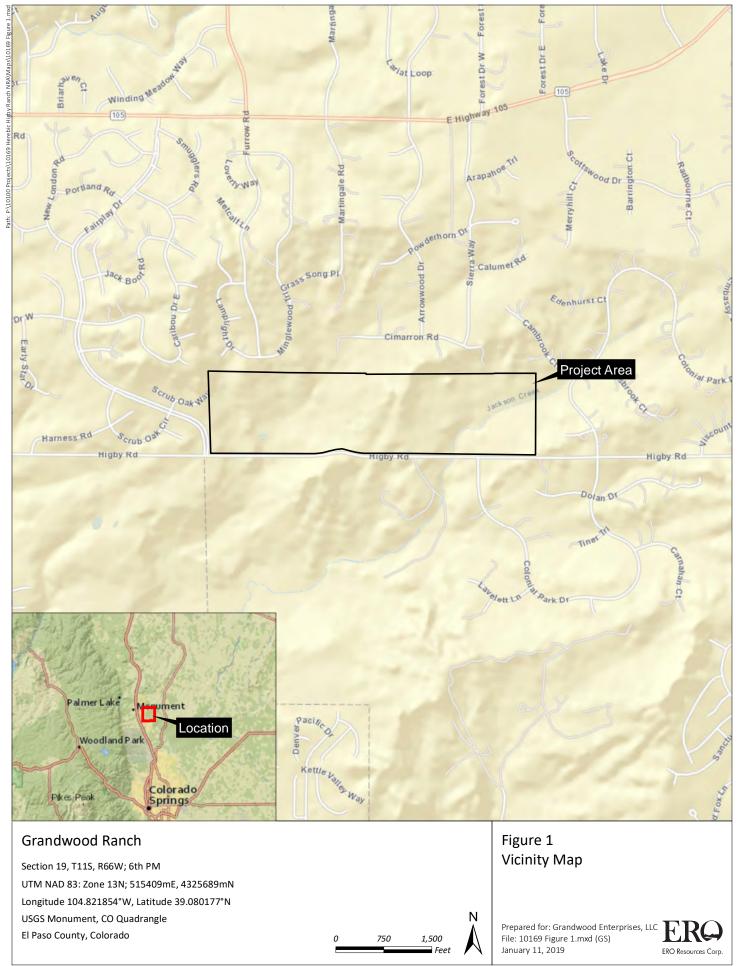
Project Area Description

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 2Error! 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

• Data Point

→ Photo Point

Preble's Habitat (9.279 ac)

83

Wetland (0.605 ac)



Ordinary High Water Mark (0.601 ac)



Project Area Boundary

0 60 120 Feet

Figure 2a Existing Conditions

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

ERO Resources Corp.

Image Source: Google Earth©, June 2017



Preble's Habitat (9.279 ac)

Project Area Boundary

120

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



Image Source: Google Earth©, June 2017

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?
		Mammals		
North American wolverine	Gulo gulo luscus	PT	Subalpine forests above 8,000 feet in elevation	No
Preble's meadow jumping mouse	Zapus hudsonius preblei	Т	Shrub riparian/wet meadows	Yes
		Birds		
Interior least tern**	Sterna antillarum athalassos	E	Sandy/pebble beaches on lakes, reservoirs, and rivers	No habitat and not within the South Platte River watershed
Mexican spotted owl	Strix occidentalis	Т	Closed canopy forests in steep canyons	No
Piping plover**	Charadrius melodus	Т	Sandy lakeshore beaches and river sandbars	No habitat and not within the South Platte River watershed
Whooping crane**	Grus americana	E	Mudflats around reservoirs and in agricultural areas	No habitat and not within the South Platte River watershed
		Fish	"	
Greenback cutthroat trout	Oncorhynchus clarki stomias	Т	Cold, clear, gravel headwater streams and mountain lakes	No
Pallid sturgeon**	Scaphirhynchus albus	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
		Plants		
Ute ladies'-tresses orchid	Spiranthes diluvialis	Т	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**	Platanthera praeclara	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.

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.

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

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 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 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 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 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.

Project/Site: Herebic Higby Ranch		City/Cou	nty: El Paso	, Co	Sampling Date:	6/1/18
Applicant/Owner:				State: CO	Sampling Point:	DP-1
Investigator(s): NHH, GAH		Section, T	ownship, Ra	nge:		
Landform (hillside, terrace, etc.): Slope		Local relief (co	oncave, conv	ex, none): Concave	Slop	oe (%): 0.5
Subregion (LRR): LRR E Lat:			Long:		Datum:	
Soil Map Unit Name:				NIWI class	ification:	
Are climatic / hydrologic conditions on the site typical for			Yes X	_		
Are Vegetation, Soil, or Hydrology		•		Circumstances" present?)
Are Vegetation, Soil, or Hydrology				plain any answers in Re		
SUMMARY OF FINDINGS – Attach site ma					•	ures, etc.
Hydrophytic Vegetation Present? Yes X N	0	Is the	Sampled A	rea		
	0		n a Wetland		No	
	o <u> </u>				<u> </u>	
Remarks:		•				
VEGETATION – Use scientific names of p	olants.					
Trac Charles (Dist size)	Absolute	Dominant	Indicator	Daminanaa Taat wa	ulvala a a t	
Tree Stratum (Plot size:) 1.	% Cover	Species?	Status	Dominance Test wo		
				Number of Dominant Are OBL, FACW, or F	•	3 (A)
3.				Total Number of Dom	-	(/.)
4.				Across All Strata:		3 (B)
		=Total Cover		Percent of Dominant	Species That	
Sapling/Shrub Stratum (Plot size:)			Are OBL, FACW, or F	AC: 10	0.0% (A/B)
1. Salix exigua	5	Yes	FACW			
2.				Prevalence Index we		. h
3. 4.				Total % Cover o		90
5.						30
	5	=Total Cover			0 x 3 =	0
Herb Stratum (Plot size:)				FACU species	0 x 4 =	0
1. Typha X glauca	50	Yes	OBL	UPL species	0 x 5 =	0
2. Scirpus pallidus	30	Yes	OBL		`′	120 (B)
3. Juncus balticus	10	No	FACW	Prevalence Index	= B/A = 1.14	<u> </u>
4. Epilobium palustre	10	No	OBL	Hadran badla Manata	the state of the s	
5 6.				Hydrophytic Vegetat		ation
7				X 2 - Dominance To	r Hydrophytic Vegeta est is >50%	alion
	<u> </u>			X 3 - Prevalence In		
9.					Adaptations ¹ (Provide	de supporting
10.				data in Remar	ks or on a separate	sheet)
11.				5 - Wetland Non-	Vacular Plants ¹	
	100	=Total Cover		Problematic Hydr	ophytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size:)			¹ Indicators of hydric s		
1.				be present, unless dis	sturbed or problema	tic.
2		=Total Cover		Hydrophytic		
% Bare Ground in Herb Stratum		– rotal Cover		Vegetation Present? Yes	XNo	
Remarks:						

Profile Desc									Sampling Point: DP-1
	cription: (Describe	to the depth				tor or c	onfirm the	absence o	findicators.)
Depth	Matrix	0/		x Featur		Loc ²	T		Demode
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type		Text		Remarks
0-20	10YR 2/2	80	10YR 5/6	20	<u>C</u>	 	Loamy/	Clayey	Prominent redox concentrations
					<u> </u>	<u> </u>			
1 _{Type:} C-C	oncontration D_Dan	lotion BM-F	Poduood Matrix (rod or Co		and Crains	² l 2000	ion: PL=Pore Lining, M=Matrix.
	oncentration, D=Deplica					bated Sa	and Grains.		for Problematic Hydric Soils ³ :
Histosol Histic Ep Black His Hydroge	(A1) bipedon (A2) stic (A3) en Sulfide (A4)		Sandy Red Stripped M Loamy Mu Loamy Gle	dox (S5) fatrix (S6 icky Mine eyed Mat	i) eral (F1) (rix (F2)	(except	MLRA 1)	2 cm Red P Very \$	Muck (A10) arent Material (F21) Shallow Dark Surface (F22) (Explain in Remarks)
Thick Da Sandy M 2.5 cm M	d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Mucky Peat or Peat (Seyed Matrix (S4)		Depleted I X Redox Da Depleted I Redox De	rk Surfac Dark Surf	e (F6) ace (F7)			wetlar	of hydrophytic vegetation and dhydrology must be present, sidisturbed or problematic.
Type: Depth (in	Layer (if observed):		_ _				Hydric So	oil Present	Yes <u>X</u> No
	m is revised from We Version 8.0, 2016.	estern Moun	tains, Valleys, an	d Coast	Regional	Supple	ment Versic	on 2.0 to inc	lude the NRCS Field Indicators of
HYDROLO	GY								
Wetland Hyd	drology Indicators:								
Primary Indic	cators (minimum of o								
		mary Indicators (minimum of one is required; check all that apply)						Secondary	/ Indicators (2 or more required)
X Surface	` '	ne is require	Water-Sta	ined Lea	` ,	•	 	Water	-Stained Leaves (B9) (MLRA 1, 2
X Surface V	ater Table (A2)	ne is require	Water-Sta	ined Lea 1, 2, 4A,	` ,	•	<u> </u>	Water	-Stained Leaves (B9) (MLRA 1, 2, and 4B)
X Surface Wallingh Wall	ater Table (A2) on (A3)	ne is require	Water-Sta MLRA Salt Crust	ined Lea 1, 2, 4A, (B11)	and 4B)	•	<u> </u>	Water 4A X Draina	-Stained Leaves (B9) (MLRA 1, 2 , and 4B) age Patterns (B10)
X Surface Migh Wax Saturation Water M	ater Table (A2) on (A3) larks (B1)	ne is require	Water-Sta MLRA Salt Crust Aquatic In	ined Lea 1, 2, 4A, (B11) vertebrat	and 4B) es (B13)	` •	t	Water 4A X Draina Dry-Se	-Stained Leaves (B9) (MLRA 1, 2 , and 4B) age Patterns (B10) eason Water Table (C2)
X Surface Migh Wa X Saturatio Water M Sedimen	ater Table (A2) on (A3) larks (B1) nt Deposits (B2)	ne is require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C	and 4B) es (B13) Odor (C1)			Water 4A X Draina Dry-Sa	-Stained Leaves (B9) (MLRA 1, 2 , and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9)
X Surface Migh Wa X Saturation Water M Sediment Drift Dep	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	ne is require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph	and 4B) es (B13) Odor (C1) eres on L	Living Ro		Water 4A X Draina Dry-Se Satura X Geom	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2)
X Surface Migh Wa X Saturation Water M Sedimen Drift Dep Algal Ma	ater Table (A2) on (A3) larks (B1) ot Deposits (B2) posits (B3) at or Crust (B4)	ne is require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc	and 4B) es (B13) Odor (C1) eres on L ed Iron (Living Ro	oots (C3)	Water 4A X Draina Dry-Si Satura X Geom Shallo	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3)
X Surface High Wa X Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ne is require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc	es (B13) Odor (C1) eres on Led Iron (Living Ro C4) lled Soil	oots (C3) s (C6)	X Draina Dry-Satura X Geom Shallo X FAC-N	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5)
X Surface Migh Wa X Saturation Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Minundation	ater Table (A2) on (A3) larks (B1) ot Deposits (B2) posits (B3) at or Crust (B4)	magery (B7)	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc n Reduc	es (B13) Odor (C1) eres on Led Iron (tion in Tild	Living Ro C4) lled Soil	oots (C3) s (C6)	Water 4A X Draina Dry-S Satura X Geom Shallc X FAC-N Raise	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3)
X Surface Migh Wa X Saturation Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Minundation	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave	magery (B7)	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc n Reduc	es (B13) Odor (C1) eres on Led Iron (tion in Tild	Living Ro C4) lled Soil	oots (C3) s (C6)	Water 4A X Draina Dry-S Satura X Geom Shallc X FAC-N Raise	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Jeutral Test (D5) d Ant Mounds (D6) (LRR A)
X Surface Management M	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial In v Vegetated Concave vations:	magery (B7)	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc n Reduc	and 4B) es (B13) Ddor (C1) eres on L ed Iron (tion in Til d Plants emarks)	Living Ro C4) lled Soil	oots (C3) s (C6)	Water 4A X Draina Dry-S Satura X Geom Shallc X FAC-N Raise	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Jeutral Test (D5) d Ant Mounds (D6) (LRR A)
X Surface Migh Wa X Saturation Water Migh Sedimen Drift Dep Algal Mail Iron Dep Surface Surface Sparsely	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial In v Vegetated Concave vations:	magery (B7) e Surface (B8	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc n Reduc Stresse blain in R	and 4B) es (B13) Ddor (C1) eres on L ed Iron (tion in Til d Plants emarks)	Living Ro C4) lled Soil	oots (C3) s (C6)	Water 4A X Draina Dry-S Satura X Geom Shallc X FAC-N Raise	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Jeutral Test (D5) d Ant Mounds (D6) (LRR A)
X Surface Migh Wa X Saturation Water M Sediment Drift Depton Algal Mallron Depton Surface Surface Surface Water Might Surface	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial In vegetated Concave vations: er Present? Ye Present?	magery (B7) e Surface (B8	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc n Reduc Stresse blain in R	and 4B) es (B13) Dor (C1) eres on L eed Iron (tion in Tii d Plants emarks) nches): _ nches): _	Living Ro C4) lled Soil	oots (C3) s (C6) RR A)	Water 4A X Draina Dry-S Satura X Geom Shallo X FAC-N Raise Frost-	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Jeutral Test (D5) d Ant Mounds (D6) (LRR A)
X Surface Migh Wa X Saturation Water M Sediment Drift Depton Algal Maler Iron Depton Surface Surface Surface Water Table	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial In v Vegetated Concave vations: er Present? Present? Ye resent? Ye	magery (B7) Surface (B8 s <u>X</u>	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc n Reduc stresse blain in R	and 4B) es (B13) Dor (C1) eres on L eed Iron (tion in Tii d Plants emarks) nches): _ nches): _	Living Ro C4) lled Soil (D1) (LF	oots (C3) s (C6) RR A)	Water 4A X Draina Dry-S Satura X Geom Shallo X FAC-N Raise Frost-	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7)
X Surface May High Wa A Saturation Water M Sedimen Drift Dep Algal Ma Iron Dep Surface May Iron Dep Surface Sparsely Field Observation Procession of the Saturation Procession of the Saturati	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial In v Vegetated Concave vations: er Present? Present? Ye resent? Ye	magery (B7) e Surface (B8 es X es X	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp No No X No	ined Lea 1, 2, 4A, (B11) vertebrat Sulfide C Rhizosph of Reduc n Reduc Stresse blain in R Depth (i Depth (i	es (B13) Dodor (C1) eres on L eed Iron (tion in Til d Plants emarks) nches): _ nches): _ nches): _	Living Ro C4) Illed Soil (D1) (LF	oots (C3) s (C6) RR A) Wetland	Water 4A X Draina Dry-Si Satura X Geom Shallo X FAC-N Raise Frost-	-Stained Leaves (B9) (MLRA 1, 2, and 4B) age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7)

Project/Site: Herebic Higby Ranch		City/Cour	nty: El Paso	, Co	Sampling Date:	6/1/18
Applicant/Owner:				State: CO	Sampling Point:	DP-2
Investigator(s): NHH, GAH		Section, T	Γownship, Ra	nge:		
Landform (hillside, terrace, etc.): Slope		Local relief (co	oncave, conv	vex, none): None	Slop	oe (%): 0.1
Subregion (LRR): LRR E Lat:			Long:		Datum:	
Soil Map Unit Name:				NIMI alegait	fication:	
Are climatic / hydrologic conditions on the site typical			Yes X			
Are Vegetation, Soil, or Hydrology		•		Circumstances" present?)
Are Vegetation , Soil , or Hydrology				plain any answers in Rer		
SUMMARY OF FINDINGS – Attach site n					•	ures, etc.
Hydrophytic Vegetation Present? Yes X	No	Is the	e Sampled A	rea		
	No X		n a Wetland		No X	
	No X					
Remarks:		<u> </u>				
VEGETATION – Use scientific names of	plants.					
	Absolute	Dominant	Indicator			
Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test wor	ksheet:	
1.	_			Number of Dominant S	•	4 (4)
2. 3.				Are OBL, FACW, or F		1 (A)
3. 4.				Total Number of Domi Across All Strata:	nant Species	1 (B)
		=Total Cover		Percent of Dominant S	Species That	(=)
Sapling/Shrub Stratum (Plot size:)			Are OBL, FACW, or F	•	0.0% (A/B)
1.	_					
2				Prevalence Index wo		
3.				Total % Cover of		_
4 5.				OBL species C		0
J	_	=Total Cover		FAC species 9		270
Herb Stratum (Plot size:)		_10tal 0010l		FACU species 0		0
1. Agrostis gigantea	80	Yes	FAC	UPL species 1	0 x 5 =	50
2. Thlaspi arvense	10	No	UPL	Column Totals: 10	00 (A) 3	320 (B)
3. Barbarea vulgaris	10	No	FAC	Prevalence Index	= B/A = <u>3.20</u>)
4						
56.				Hydrophytic Vegetati		ation
7				X 2 - Dominance Te	Hydrophytic Vegeta	111011
8.				3 - Prevalence Inc		
9.	_			4 - Morphological	Adaptations ¹ (Provid	de supporting
10.				data in Remark	s or on a separate	sheet)
11				5 - Wetland Non-	√acular Plants ¹	
		=Total Cover		Problematic Hydro	ophytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size:	_)			¹ Indicators of hydric so		
1 2.	_			be present, unless dis	turbed or problema	ilC.
		=Total Cover		Hydrophytic		
% Bare Ground in Herb Stratum				Vegetation Present? Yes	X No	
Remarks:						

Profite Description: (Description: (Description: Content of potential measures)	peth Netrix Redox Features Color (moist) % Color (moist) % Type Log* Texture Remarks D.20 10YR 2/2 100 Loamy/Clayey Loamy/Clayey June Co-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Loamy/Clayey June Co-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Loamy/Clayey June Co-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Loamy/Clayey June Co-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Loamy/Clayey June Co-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Loamy/Clayey June Co-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Loamy/Redox (S5) Loamy/Redox Matrix (S6) Redox Depleted Batrix (S6) Depleted Below Dark Surface (A1) June Surface Matrix (S4) Depleted Below Dark Surface (A1) June Surface Matrix (S6) Surface Water Poster (A1) Presence of Reduced fron (C4) Secondary Indicators (2 or more required to the Netherland Surface (A1) June Surface Matrix (S6) Depleted Below Dark Surface (A1) Depleted Below Dark Surface (A1) Presence of Reduced fron (C4) Secondary Indicators (2 or more required Surface (A1) June Surface Matrix (A1) Depleted Below Dark S	SOIL									Sampling Point	: <u>DP-2</u>
Color (moist) % Color (moist) % Color (moist) % Type Loc Loamy/Clayey Color (moist) % Type Loamy/Clayey Color (moist) % Color (moist) % Type Loamy/Clayey Color (moist) % Color (moist) Color (moist	Color (moist)		ription: (Descri	be to the dept				tor or o	confirm the	absence of indica	ators.)	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix, Ptypric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils Location Location Location: PL=Pore Lining, M=Matrix, Ptypric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils Location Loca	Commentation		Matri				- 1	2				
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Topic	ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Full Coality Full	(inches)	Color (moist)) %	Color (moist)	%	Type	Loc²	Tex	ture	Remarks	
Histosol (A1) Sandy Redox (S5) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils	ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (SS) 2 cm Muck (A10) Histosol (A1) Sandy Redox (SS) 2 cm Muck (A10) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (F21) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) wetland hydrology must be present, unless disturbed or problematic. Sardy Gleyed Matrix (S4) Wetland from Served): Type: Depth (inches): Hydric Soil Present? Yes No emarks: initial data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators ydric Soils, Version 8.0, 2016. **TOROLOGY** [VERICAL OF VERICAL O	0-20	10YR 2/2	100					Loamy	/Clayey		
Histosol (A1) Sandy Redox (S5) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils	ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (SS) 2 cm Muck (A10) Histosol (A1) Sandy Redox (SS) 2 cm Muck (A10) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (F21) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) wetland hydrology must be present, unless disturbed or problematic. Sardy Gleyed Matrix (S4) Wetland from Served): Type: Depth (inches): Hydric Soil Present? Yes No emarks: initial data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators ydric Soils, Version 8.0, 2016. **TOROLOGY** [VERICAL OF VERICAL O											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (SS) 2 cm Muck (A10) Histosol (A1) Sandy Redox (SS) 2 cm Muck (A10) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (F21) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) wetland hydrology must be present, unless disturbed or problematic. Sardy Gleyed Matrix (S4) Wetland from Served): Type: Depth (inches): Hydric Soil Present? Yes No emarks: initial data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators ydric Soils, Version 8.0, 2016. **TOROLOGY** [VERICAL OF VERICAL O											
Histosol (A1) Sandy Redox (S5) Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils	ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (SS) 2 cm Muck (A10) Histosol (A1) Sandy Redox (SS) 2 cm Muck (A10) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (F21) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) wetland hydrology must be present, unless disturbed or problematic. Sardy Gleyed Matrix (S4) Wetland from Served): Type: Depth (inches): Hydric Soil Present? Yes No emarks: initial data form is revised from Western Mountains, Valleys, and Coast Regional Supplement Version 2.0 to include the NRCS Field Indicators ydric Soils, Version 8.0, 2016. **TOROLOGY** [VERICAL OF VERICAL O											
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Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): Security Fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ield Observations: urface Water Present? Yes No X Depth (inches): /ater Table Present? Yes No X Depth (inches): aturation Present? Yes No X Depth (inches): modudes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				· `	Explain in R	Remarks)			Frost-Heave	Hummocks (D7)	
Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): Includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	urface Water Present? Yes No X Depth (inches):	Sparsely	Vegetated Conc	ave Surface (B	8)							
Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Vater Table Present? Yes No X Depth (inches): aturation Present? Yes No X Depth (inches): mcludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Field Observ	vations:									
Water Table Present? Yes No X Depth (inches): Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Vater Table Present? Yes No X Depth (inches): aturation Present? Yes No X Depth (inches): mcludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Surface Wate	er Present?	Yes	No X	Depth (i	nches):					
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	aturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No ncludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Nater Table	Present?	Yes	No X		_		·			
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ncludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Saturation Pr	esent?	Yes	No X	Depth (i	nches):		Wetlan	d Hydrology Pres	ent? Yes	No
		(includes cap	oillary fringe)									
Remarks:	emarks:	Describe Red	corded Data (stre	am gauge, mo	nitoring well, ae	rial photos	, previous	inspec	ctions), if ava	ailable:		
Remarks:	emarks:											
		Remarks:				-						

Project/Site: Herebic Higby Ranch		City/Cour	nty: El Paso,	Co		Sampling Dat	te: 6/1/	18
Applicant/Owner:				State:	СО	Sampling Poi	nt:	DP-3
Investigator(s): NHH, GAH		Section, T	Γownship, Rar	nge:				
Landform (hillside, terrace, etc.): Swale		_ocal relief (co	oncave, conve	ex, none): (Concave		Slope (%)): 1
Subregion (LRR): LRR E Lat:			Long:	_		Datur	m:	
Soil Map Unit Name:				-	NWI classifi	cation:	' <u>'</u>	
Are climatic / hydrologic conditions on the site typica			Yes X	No	(If no, expl	ain in Remarks	S.)	
Are Vegetation, Soil, or Hydrology	significantly d	disturbed? A		ircumstances	s" present?	Yes X	No	
Are Vegetation, Soil, or Hydrology			If needed, exp					_
SUMMARY OF FINDINGS – Attach site r				-			eatures	s, etc.
Hydrophytic Vegetation Present? Yes X	No	Is the	e Sampled Ar	ea				
Hydric Soil Present? Yes X	No	withi	n a Wetland?)	Yes X	No		
Wetland Hydrology Present? Yes X	No							
Remarks:								
VEGETATION – Use scientific names of	f plants.							
	Absolute	Dominant	Indicator					
Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominanc	e Test work	sheet:		
1.					Dominant S	•	0	(4)
2. 3.					FACW, or FA	_	2	(A)
3. 4.				Across All		nant Species	3	(B)
		=Total Cover		Percent of	Dominant S	pecies That		- ` ′
Sapling/Shrub Stratum (Plot size:)				ACW, or FA	•	66.7%	(A/B)
1. Prunus virginiana	5	Yes	FACU					
2.					e Index wor			
3.		·-			% Cover of:		tiply by:	_
4 5.				OBL specie FACW spe			70 40	_
o		=Total Cover		FAC specie				_
Herb Stratum (Plot size:)				FACU spec			20	_
1. Typha X glauca	70	Yes	OBL	UPL specie	es 0	x 5 =	0	_
2. Persicaria pensylvanica	20	Yes	FACW	Column To	tals: 105	5 (A)	160	(B)
3. Barbarea vulgaris	10	No	FAC	Prevale	nce Index =	B/A =1	1.52	_
4								
5.	_				_	on Indicators:		
6 7.					minance Tes	Hydrophytic Ve	getation	
8					valence Inde			
						Adaptations ¹ (Pr	ovide sur	portina
10.						s or on a separa		
11.				5 - We	tland Non-V	acular Plants ¹		
	100 =	=Total Cover		Proble	matic Hydro	phytic Vegetati	on ¹ (Expl	ain)
Woody Vine Stratum (Plot size:	<u> </u>					il and wetland h		must
1				be present,	, unless dist	urbed or proble	matic.	
2				Hydrophyt				
% Bare Ground in Herb Stratum	=	=Total Cover		Vegetation Present?	n Yes_	X No_		
Remarks:								

SOIL DP-3 Sampling Point: Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features Loc² Color (moist) % Color (moist) % (inches) Type **Texture** Remarks 0-2 10YR 2/1 100 Sandy 2-20 10YR 5/6 10YR 3/1 80 20 C Sandy Prominent redox concentrations M ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: 2 cm Muck (A10) Histosol (A1) X Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (F21) Loamy Mucky Mineral (F1) (except MLRA 1) Black Histic (A3) Very Shallow Dark Surface (F22) Hydrogen Sulfide (A4) Other (Explain in Remarks) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) 2.5 cm Mucky Peat or Peat (S2) (LRR G) wetland hydrology must be present, Redox Depressions (F8) Sandy Gleyed Matrix (S4) unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): **Hydric Soil Present?** 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) Surface Water (A1) Water-Stained Leaves (B9) (except Water-Stained Leaves (B9) (MLRA 1, 2 High Water Table (A2) MLRA 1, 2, 4A, and 4B) 4A, and 4B) X Saturation (A3) Salt Crust (B11) X Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Oxidized Rhizospheres on Living Roots (C3) X Geomorphic Position (D2) Drift Deposits (B3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) X FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Depth (inches): Yes Water Table Present? Depth (inches): Saturation Present? Depth (inches): Wetland Hydrology Present? Yes X No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

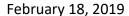
Remarks:

Project/Site: Herebic Higby Ranch		City/Cour	nty: El Paso	, Co	Sampling Date	e: <u>6/1/18</u>
Applicant/Owner:				State: CO	Sampling Point	t: <u>DP-4</u>
Investigator(s): NHH, GAH		Section, T	Гownship, Ra	nge:	_	
Landform (hillside, terrace, etc.): Slope		Local relief (co	oncave, conv	ex, none): None	SI	ope (%): 2
Subregion (LRR): LRR E Lat:			Long:	• -		
Soil Map Unit Name:						·
Are climatic / hydrologic conditions on the site typica						
				·		
Are Vegetation, Soil, or Hydrology					·	
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS – Attach site is				plain any answers in F cations, transect		atures, etc.
Hydrophytic Vegetation Present? Yes	No X	Is the	e Sampled A	rea		
Hydric Soil Present? Yes	No X		n a Wetland		No X	
Wetland Hydrology Present? Yes						
Remarks:						
VEGETATION – Use scientific names of	f plants.					
T 0:	Absolute	Dominant	Indicator			
Tree Stratum (Plot size:)		Species?	Status	Dominance Test w		
1.				Number of Dominar Are OBL, FACW, or		0 (A)
3.				Total Number of Do		(/1)
4.				Across All Strata:	minant Species	2 (B)
		=Total Cover		Percent of Dominar	nt Species That	
Sapling/Shrub Stratum (Plot size:)			Are OBL, FACW, or	•	0.0% (A/B)
1						
2				Prevalence Index		
3.				Total % Cover		oly by:
4.				OBL species	0	
5		=Total Cover		FACW species FAC species	10 x 3 =	
Herb Stratum (Plot size:)		- Total Cover		FACU species		
1. Bromus inermis	70	Yes	UPL		100 x 5 =	500
2. Thlaspi arvense	30	Yes	UPL	Column Totals:	110 (A)	530 (B)
3. Cirsium arvense	10	No	FAC	Prevalence Inde	ex = B/A = 4.	82
4						
5				Hydrophytic Veget		
6				·	for Hydrophytic Veg	etation
7.				2 - Dominance 3 - Prevalence		
8. 9.					al Adaptations¹(Pro	vide supporting
10	_				arks or on a separat	
11	_			5 - Wetland No	n-Vacular Plants ¹	
	110	=Total Cover		Problematic Hy	drophytic Vegetation	n ¹ (Explain)
Woody Vine Stratum (Plot size:)			¹ Indicators of hydric	soil and wetland hy	drology must
1	_ 				disturbed or problem	
2				Hydrophytic		
		=Total Cover		Vegetation		.,
% Bare Ground in Herb Stratum				Present? Ye	es No_>	<u><</u>
Remarks:						

SOIL									Sampling Point	:: DP-4
Profile Desc	ription: (Describe t	to the depth	needed to doci	ument th	e indica	tor or c	confirm the	absence of indi	cators.)	
Depth	Matrix	-		x Feature					·	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Tex	ture	Remarks	
0-20	10YR 2/2	100	_				Loamy/	Clayey		
¹ Type: C=Co	oncentration, D=Depl	etion, RM=R	educed Matrix, C	S=Cove	red or Co	ated S	and Grains.	² Location:	PL=Pore Lining, M	=Matrix.
Hydric Soil I	ndicators: (Applica	ble to all LR	Rs, unless othe	erwise no	oted.)			Indicators for	Problematic Hydri	ic Soils³:
Histosol	(A1)		Sandy Red	dox (S5)				2 cm Muck	(A10)	
Histic Ep	ipedon (A2)		Stripped M	latrix (S6	5)			Red Paren	t Material (F21)	
Black His	stic (A3)		Loamy Mu	cky Mine	eral (F1) (except	MLRA 1)	Very Shallo	ow Dark Surface (F	22)
	n Sulfide (A4)		Loamy Gle	-				Other (Exp	lain in Remarks)	
	Below Dark Surface	e (A11)	Depleted N							
	rk Surface (A12)		Redox Dai					3		
	ucky Mineral (S1)	20) (I DD 0)	Depleted [` '				ydrophytic vegetati	
	flucky Peat or Peat (\$	52) (LRR G)	Redox Dep	oressions	S (F8)			-	drology must be pro-	
	leyed Matrix (S4)					1		uniess dist	urbed or problemat	IC.
_	ayer (if observed):									
Type: Depth (in	ochoc):		_				Hydric S	oil Present?	Yes	No X
			_				Tiyunc 30	Jii i resent:	165	No X
Remarks:	m is revised from We	stern Mount:	aine Valleve an	d Coast I	Regional	Sunnle	ment Versic	on 2.0 to include t	the NRCS Field Inc	dicators of
	Version 8.0, 2016.	Storr Wourte	anis, vancys, an	u Oodst i	rtogioriai	Оирріс	inone versio	on 2.0 to include		ilicators of
HYDROLO	GY									-
	drology Indicators:									
_	ators (minimum of o	ne is required	d check all that a	apply)				Secondary Indi	cators (2 or more re	equired)
-	Water (A1)	no io roquiroc	Water-Sta		ves (B9)	(excep	t	-	ned Leaves (B9) (N	
	ter Table (A2)				and 4B)	(4A, and		, _
Saturatio			Salt Crust		,			Drainage P	atterns (B10)	
Water Ma	arks (B1)		Aquatic In	vertebrat	es (B13)			Dry-Season	n Water Table (C2)	
Sedimen	t Deposits (B2)		Hydrogen	Sulfide C	Odor (C1)			Saturation	Visible on Aerial Im	nagery (C9)
Drift Dep	osits (B3)		Oxidized F	Rhizosph	eres on L	iving R	oots (C3)	Geomorphi	c Position (D2)	
	t or Crust (B4)		Presence		,	,			uitard (D3)	
	osits (B5)		Recent Iro				` '		al Test (D5)	
	Soil Cracks (B6)	(DZ)	Stunted or			(D1) (L I	RR A)		Mounds (D6) (LRI	₹ A)
	on Visible on Aerial Ir		Other (Exp	piain in K	emarks)			Frost-Heav	e Hummocks (D7)	
	Vegetated Concave	Surface (B8))							
Field Observ			N. V	D (1 (1						
Surface Water			No X	Depth (in	· -					
Water Table Saturation Pr			No X No X	Depth (in Depth (in	_		Wotlan	d Hydrology Pre	seent? Vos	No Y
(includes cap		» <u>—</u>	NO X	Deptii (ii	icries).		wellan	a nyarology Fre	esent? Yes	NoX_
	corded Data (stream	gauge. moni	toring well. aeria	l photos.	previous	inspec	tions), if ava	ailable:		
	(2	J - J - , 11.	J : ,	,,		- 1 0	.,,			
Remarks:										

Project/Site: Herebic Higby Ranch	City/County: El Pas	so, Co	Sampling Date:	6/1/18
Applicant/Owner:		State: CO	Sampling Point:	DP-5
Investigator(s): NHH, GAH	Section, Township, F	Range:		
Landform (hillside, terrace, etc.): Channel	Local relief (concave, con	nvex, none): Concave	Slop	e (%): 0
Subregion (LRR): LRR E Lat:			Datum:	
Soil Map Unit Name:		NWI classifi	ication:	
Are climatic / hydrologic conditions on the site typic	cal for this time of year? Yes X	No (If no, exp	lain in Remarks.)	
Are Vegetation , Soil , or Hydrology	significantly disturbed? Are "Norma	I Circumstances" present?	Yes X No)
Are Vegetation , Soil , or Hydrology	naturally problematic? (If needed, 4	explain any answers in Ren	narks.)	
SUMMARY OF FINDINGS – Attach site	map showing sampling point I	ocations, transects,	important feat	ures, etc.
Hydrophytic Vegetation Present? Yes X	No Is the Sampled	Area		
Hydric Soil Present? Yes X	No within a Wetlan	nd? Yes X	No	
Wetland Hydrology Present? Yes X	No			
Remarks:				
VEGETATION – Use scientific names of				
<u>Tree Stratum</u> (Plot size:)	Absolute Dominant Indicator % Cover Species? Status	Dominance Test work	ksheet:	
1		Number of Dominant S		
2.		Are OBL, FACW, or FA	•	1 (A)
3.		Total Number of Domin	•	
4	=Total Cover	Across All Strata:		1 (B)
Sapling/Shrub Stratum (Plot size:		Percent of Dominant S Are OBL, FACW, or FA	•	0.0% (A/B
1.	<u> </u>			(* 1 =)
2.		Prevalence Index wo	rksheet:	
3		Total % Cover of:	Multiply	by:
4		OBL species 10		00
5	=Total Cover	FACW species 0		0
Herb Stratum (Plot size:)		FACU species 0		0
1. Typha X glauca	100 Yes OBL	· -		0
2.		Column Totals: 10	0 (A) 1	00 (B)
3.		Prevalence Index =	= B/A = <u>1.00</u>	
4		. Hydronbytia Vagatati	on Indicators	
5 6.		Hydrophytic Vegetation X 1 - Rapid Test for		ation
7.		X 2 - Dominance Tes		111011
8.		X 3 - Prevalence Ind		
9.		<u> </u>	Adaptations ¹ (Provid	
10			s or on a separate s	sheet)
11		5 - Wetland Non-V		
Woody Vino Stratum (Diet size:	=Total Cover		ophytic Vegetation ¹	
Woody Vine Stratum (Plot size:1.	 ′	¹ Indicators of hydric so be present, unless dist		
1 2.				
	=Total Cover	Hydrophytic Vegetation		
% Bare Ground in Herb Stratum		Present? Yes_	X No	
Remarks:				

SUIL			Sampling Point: DP-5
Profile Description: (Describe to the depth	needed to document the indicator or o	confirm the absence o	f indicators.)
Depth Matrix	Redox Features		
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture	Remarks
			-
			_
¹ Type: C=Concentration, D=Depletion, RM=R	educed Matrix, CS=Covered or Coated S	and Grains. ² Loca	tion: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LR	Rs, unless otherwise noted.)	Indicators	s for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5)	2 cm	Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red F	Parent Material (F21)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except		Shallow Dark Surface (F22)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	· — ·	(Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)		(Explain in Remarks)
Thick Dark Surface (A12)	Redox Dark Surface (F6)		
• • • • • • • • • • • • • • • • • • • •	Depleted Dark Surface (F7)	3In diagtor	s of hydrophytic vegetation and
Sandy Mucky Mineral (S1)			
2.5 cm Mucky Peat or Peat (S2) (LRR G)	Redox Depressions (F8)		nd hydrology must be present,
Sandy Gleyed Matrix (S4)		unies	s disturbed or problematic.
Restrictive Layer (if observed):			
Type:	_		
Depth (inches):	<u>_</u>	Hydric Soil Present	? Yes No
Remarks:			
This data form is revised from Western Mount	ains, Valleys, and Coast Regional Supple	ment Version 2.0 to inc	clude the NRCS Field Indicators of
Hydric Soils, Version 8.0, 2016. No soil pit was	s dug due to Vegetation and Hydrology m	eeting the Rapid Test.	
HYDROLOGY			
Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required	d: check all that apply)	Secondar	y Indicators (2 or more required)
X Surface Water (A1)	Water-Stained Leaves (B9) (excep		r-Stained Leaves (B9) (MLRA 1, 2
X High Water Table (A2)	MLRA 1, 2, 4A, and 4B)		A, and 4B)
X Saturation (A3)	Salt Crust (B11)		age Patterns (B10)
			` , ,
Water Marks (B1)	Aquatic Invertebrates (B13)		eason Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)		ation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres on Living R		norphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)		ow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Tilled Soi	` ′ —	Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (L	RR A) Raise	ed Ant Mounds (D6) (LRR A)
X Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-	Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)		
Field Observations:			
Surface Water Present? Yes X	No Depth (inches): 3		
Water Table Present? Yes X	No Depth (inches): 0		
Saturation Present? Yes X	No Depth (inches): 0	Wetland Hydrolog	y Present? Yes X No
	Deptil (iliches).	Welland Hydrolog	y rieseit: Tes NO
(includes capillary fringe)	toring well perial photos, provious inches	tions) if available:	
Describe Recorded Data (stream gauge, moni	toring weil, aeriai priotos, previous inspec	aionoj, ii avaliable.	
Pomarke:			
Remarks:			





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

Threatened and Endangered Species Habitat Assessment — Grandwood Ranch Re:

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.

1842 Clarkson Street Denver, CO 80218 303 830 1188

Denver

Durango 1015 % Main Avenue Durango, CO 81301 970.422.2136

Hotchkiss 161 South 2nd Street Hotchkiss, CO 81419

P.O. Box 932 970.872.3020

Idaho 4001 East Main Street Emmett ID 83617 208.365.7684

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.

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				
Mammals								
North American Wolverine	Gulo luscus	PT	Boreal forests, tundra, and western mountains near rock crops and conifer stands	No				
Preble's meadow jumping mouse	Zapus hudsonius preblei	Т	Shrub riparian/wet meadows	Occupied habitat present in floodplain.				
		Birds						
Interior least tern**	Sterna antillarum athalassos	E	Sandy/pebble beaches on lakes, reservoirs, and rivers	No habitat and no depletions				
Mexican spotted owl	Strix occidentalis	Т	Closed-canopy forests in steep canyons	No				
Piping plover**	Charadrius melodus	Т	Sandy lakeshore beaches and river sandbars	No habitat and no depletions				
Whooping crane**	Grus americana	E	Mudflats around reservoirs and in agricultural areas	No habitat and no depletions				
		Fish						
Greenback cutthroat trout	Oncorhynchus clarki stomias	Т	Gravelly headwater streams or mountain lakes	No				
Pallid sturgeon**	Scaphirhynchus albus	E	Large, turbid, free-flowing rivers with a strong current and gravel or sandy substrate	No habitat and no depletions				
		Insects						
Pawnee montane skipper	Hesperia leonardus montana	Т	Open ponderosa pine woodlands (6,000 to 7,500 feet); requires blue grama and prairie gayfeather	No				
		Plants						
Ute ladies'-tresses orchid	Spiranthes diluvialis	Т	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**	Platanthera praeclara	Т	Moist to wet prairies and meadows	No habitat and no depletions				

^{*}T = Federally Threatened Species, E = Federally Endangered Species, PT = Proposed Threatened Species.

Source: Service 2019.

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

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, UTLO 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)(I)(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.

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NatureServe. 2019. NatureServe Explorer. 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.