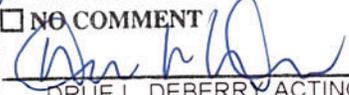




2015-7A0848

U.S. FISH AND WILDLIFE SERVICE	
<input type="checkbox"/> NO CONCERNS	
<input checked="" type="checkbox"/> CONCUR NOT LIKELY TO ADVERSELY AFFECT	
<input type="checkbox"/> NO COMMENT	
 DRUE L. DEBERRY, ACTING COLORADO FIELD SUPERVISOR	
	JUL 20 2015

Ms. Susan Linner  
 U.S. Fish and Wildlife Service  
 Ecological Services Field Office  
 134 Union Boulevard, Suite 670  
 Denver, Colorado 80228-1807

July 10, 2015

**RE: ESA Consultation for Federally Listed Preble's Meadow Jumping Mouse**

Dear Ms. Linner:

M&S Civil Consultants, Inc. (M&S Civil or Client), is in the process of permitting the first phase of the Sterling Ranch Residential Development Project (Project) in El Paso County, Colorado. Phase I will include the development of a temporary haul road, stormwater detention pond with outflow structure, utility infrastructure (including water and sewer lines), and construction of a portion of the residential development.

Prior to issuance of permits for the Project, El Paso County has requested documentation demonstrating compliance with the Endangered Species Act (ESA), specifically that the project will not adversely affect the federally threatened Preble's Meadow Jumping Mouse (PMJM or Preble's). Core Consultants, Inc. (Core), on behalf of M&S Civil, is herein seeking consultation with the U.S. Fish and Wildlife Service (USFWS or Service) on the likelihood of the Project to impact Preble's. We note that in 2007, in correspondence with the Service, M&S Civil received a "Not Likely to Adversely Affect" (NLAA) status for the Project (see **Appendix I: USFWS PMJM Disqualification Letter**). M&S Civil and Core are herein seeking an updated PMJM disqualification letter for the Project, to serve as supporting documentation for the El Paso County permitting process.

**Project Location**

The Project encompasses approximately 1,500 acres northeast of the intersection of Vollmer Road and Black Forest Road in unincorporated El Paso County, Colorado. The property is bordered by sparse residential development on the western and southern boundaries, and by mostly undeveloped land to the north and east. Aerial imagery displays a large, approximately 145 acres sand and gravel mining operation in the central portion of the property. There is one principal drainage within the Project, namely Sand Creek, as well as two of its western tributaries. The Project lies within Sections 27, 28, 32, 33, and 34 of Township 13S, Range 65W, and Sections 3, and 4 of Township 12S, Range 65W as referenced from the Public Land Survey System (PLSS).

**Previous ESA Consultations**

In accordance with recommendations from the USFWS, habitat assessments and other wildlife surveys were initiated in 2007 by Walsh Environmental Scientists and Engineers, LLC (see **Appendix II: Walsh Site Disqualification Report**). An initial desktop review by Walsh revealed that large portions of Sand Creek had been block-cleared for PMJM by the Service. Specifically, the Sand Creek drainage was block-cleared downstream from the southern boundary of the Project Area, approximately 0.5 mile south of Woodmen Road. Additionally, Walsh found the Sand Creek drainage unsuitable habitat for PMJM, as flows are minimal and intermittent and vegetation is sparse with scattered or nominal shrub, grass, and forb coverage. Since 2007, the Service has expanded the PMJM block clearance zone to include the current Project area, which is located in the northeastern portion of the block-clearance zone (see **Appendix III: PMJM Habitat Map**).





Ms. Susan Linner  
U.S. Fish and Wildlife Service  
Colorado Ecological Services Field Office  
134 Union Boulevard, Suite 670  
Denver, Colorado 80228-1807

July 10, 2015

### **Ecoregion Characteristics**

Land cover types were determined through a desktop review of the U.S. Geological Survey (USGS) National Gap Analysis Program (GAP) land cover classification system. The review indicated that the Project falls within the Foothills Grasslands Level IV ecoregion of the Southwestern Tablelands Level III ecoregion (USGS 2011):

The Foothills Grasslands contains a mix of grasslands extending east from the Rocky Mountains. Tall and mid-grasses are prominent here as a result of increased moisture from mountain runoff (USGS 2011). Big bluestem (*Andropogon gerardii*) and little bluestem (*Schizachyrium scoparium*), yellow Indiangrass (*Sorghastrum nutans*), and switchgrass (*Panicum virgatum*) are the dominant grasses, along with foothill grassland communities, and scattered pine woodlands.

### **Endangered Species**

The USFWS Information, Planning, and Conservation System (IPaC) was used to assess the potential for federally listed TES species within the proposed Project area. IPaC listed five (5) species for the area, including Preble's. Critical Habitat has been designated by the Service for Preble's, and a portion of this critical habitat does occur in El Paso County. However, Critical Habitat is not located within the Project (**Appendix III**). The middle stretch of Kettle Creek is the closest designated PMJM Critical Habitat, located approximately five miles northwest of the western Project boundary. Field efforts were subsequently conducted to ground-truth for any potentially suitable habitat on site for TES species. Federally-listed TES species which were flagged in IPaC were not found to have sufficiently suitable habitat available within the Project.

### **Preble's meadow jumping mouse**

El Paso County has specifically inquired about potential Project impacts to PMJM. The PMJM is a small, long-tailed rodent found along the Front Range between 4,600 and 7,600 feet in Colorado (USFWS 2014c). Preble's occupy riparian stream corridors located within a variety of habitats, including grassland, shrubland, forest, and mixed vegetation types along the Front Range in Colorado. However, several specific habitat requirements and existing urban development limit the species' distribution throughout its range. A primary habitat requirement is a stream channel with open water during the active season for Preble's, between May and September. Within riparian corridors associated with such streams, the species requires dense, low, woody and herbaceous vegetation near ground level of nearly any specificity. There are, however, preferred species compositions and vegetation structures that are of a higher quality than others. Willows (*Salix* spp.) of the shrub form are a dominant habitat component, particularly sandbar willow (*Salix exigua*) and smaller peachleaf willow (*Salix amygdaloides*); larger willows of the tree form are not preferred, though neither are they unsuitable. Cottonwoods (*Populus* spp.) such as *Populus deltoides* and *Populus angustifolia* are also a primary component, though again, shrubs and saplings as opposed to mature trees are ideal. Shrubby alder trees (*Alnus incana*) can also be commonly found. Snowberry (*Symphoricarpos* spp.), dogwood (*Cornus sericea*), hawthorn (*Crataegus macracantha*), and Russian olive (*Elaeagnus angustifolia*) are all common riparian shrubs indicative of suitable Preble's habitat. A variety of sedges (*Carex* spp.), rushes (*Juncus* spp.), and grasses

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(typically any lush grass will suffice) indicate healthy, dense, streamside riparian habitat that could support Preble's. A healthy forb component must also be present, though there are no specific forbs that are required (Clippinger 2002).

Additionally, Preble's requires upland habitat adjacent to the riparian corridor to use for foraging and for hibernation. Any relatively undisturbed grassland areas adjacent to appropriate streamside habitat are considered sufficient. Examples of upland habitat found to support Preble's include hayed fields, grazed pasture, agricultural lands that are not regularly disked, restored areas, areas supporting recreation trails and wildland-urban interfaces, as well as native/non-native grasslands of a sufficient quality (USFWS 2004). These upland areas are not species-specific, but within the Pine Oak Woodlands ecoregion, typical tree and shrub species might include Gambel oak (*Quercus gambelii*), chokecherry (*Prunus virginiana*), wild plum (*Prunus americana*), hawthorn (*Crataegus* sp.), skunkbush (*Rhus trilobata*), snowberry, and ponderosa pine (*Pinus ponderosa*). In the Pine Oak Woodlands ecoregion, grasses can include big bluestem, little bluestem, Indiangrass, switchgrass, mountain muhly (*Muhlenbergia montana*), prairie Junegrass (*Koeleria macrantha*), wheatgrasses (*Agropyron*, *Pascopyrum*, and *Elymus* spp.), grama grasses (*Bouteloua* spp.), *Poa* species, and fescues (*Festuca* spp.). Other shrubs, grasses, or forbs may be present in the uplands that are not included here, so long as they comprise a well-developed plains ecosystem. A taller tree component (mainly ponderosa pine, douglas fir [*Pseudotsuga mensiezzii*], or blue spruce [*Picea pungens*]) may be present as well. Habitat connectivity is also a crucial element, not only between riparian and upland habitats, but within both habitat types themselves (Dharman 2001). Features that disrupt the contiguity of suitable habitats may preclude the presence of the species either upstream or downstream of said features.

## **FINDINGS**

Upon completion of a desktop review and site reconnaissance, M&S and Core contend that the proposed Project will have no adverse effects on TES, including PMJM. Specifically, suitable habitat for PMJM is not present within the Project, for a variety of reasons. Number one, the intermittent flows of Sand Creek do not meet the criterion for an annual, open, flowing waterway. Second, the streamside vegetation is often sparse, and in particular lacking the necessary shrub cover to support Preble's. In addition, while the adjacent uplands may possess the appropriate habitat structure and components, access to the uplands from the stream channel is often prevented by steep (in many cases vertical), incised banks. Finally, previous ESA consultation in 2007 found vegetation composition and density unsuitable, and flow velocities intermittent and insufficient throughout the Sand Creek drainage, and previous trapping studies in the vicinity yielded negative results.

Since 2007, the Service has expanded the PMJM block clearance zone to include the current Project area, which is now located in the northeast portion of the block clearance zone (see **Appendix III**). At present, severe incision and erosion to the main channel of Sand Creek has created consistently steep, bare banks unsuitable for PMJM movement through the central portion of the property. Upland vegetation characteristics may be



Ms. Susan Linner  
U.S. Fish and Wildlife Service  
Colorado Ecological Services Field Office  
134 Union Boulevard, Suite 670  
Denver, Colorado 80228-1807

July 10, 2015

suitable as a mix of forbs and grasses were present at the time of the site visit; however, consistently steep banks throughout the majority of the main channel make the adjacent upland habitat inaccessible to PMJM and preclude the growth of healthy, lush riparian habitat. We kindly request an updated concurrence letter from USFWS for a "NLAA" or "No Effects" determination in association with this review. This documentation is required to satisfy El Paso County's request for USFWS concurrence that the proposed project continues to have no adverse effect on any TES, including Preble's meadow jumping mouse.

Please contact me with any questions/comments at [maynard@corecivil.com](mailto:maynard@corecivil.com) or phone: (303) 703-4444 x 122.

Sincerely,

A handwritten signature in black ink that reads 'Dan Maynard'.

Dan Maynard  
Project Coordinator/Ecologist

**CC:** Donna Lakamp ([donna\\_lakamp@fws.gov](mailto:donna_lakamp@fws.gov)), USFWS;  
Alison Michael ([alison\\_michael@fws.gov](mailto:alison_michael@fws.gov)), USFWS;  
Leslie Ellwood ([leslie\\_ellwood@fws.gov](mailto:leslie_ellwood@fws.gov)), USFWS;  
Chris Haas ([haas@corecivil.com](mailto:haas@corecivil.com)), Core Consultants;  
Virgil Sanchez ([virgils@mscivil.com](mailto:virgils@mscivil.com)), M&S Civil

**Appendices:**

Appendix I: *USFWS PMJM Disqualification Letter*  
Appendix II: *Walsh Site Disqualification Report*  
Appendix III: *PMJM Habitat Map*





Ms. Susan Linner  
U.S. Fish and Wildlife Service  
Colorado Ecological Services Field Office  
134 Union Boulevard, Suite 670  
Denver, Colorado 80228-1807

July 10, 2015

## REFERENCES

- Clippinger, N. W. 2002. Biogeography, ecology, and habitat of Preble's meadow jumping mouse (*Zapus hudsonius preblei*) in Colorado. Ph. D. Dissertation, University of Colorado, Boulder. Expected completion.
- Dharman, A. T. 2001. Movement patterns of Preble's meadow jumping mouse. Colorado State University.
- United States Fish and Wildlife Service (USFWS). 2004. Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*) Survey Guidelines. Available Online. <http://www.fws.gov/mountain-prairie/species/mammals/preble/CONSULTANTS/pmjm2004guidelines.pdf>. Accessed January 2015.
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- United States Fish and Wildlife Service (USFWS). 2014c. Preble's Meadow Jumping Mouse. Available Online. <https://www.fws.gov/mountain-prairie/species/mammals/preble/>
- US Geological Survey, Gap Analysis Program (GAP). August 2011. National Land Cover, Version 2.





**Appendix I**

*USFWS PMJM Disqualification Letter*



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Ecological Services  
Colorado Field Office  
P.O. Box 25486, DFC (65412)  
Denver, Colorado 80225-0486

IN REPLY REFER TO:  
ES/CO: T&E/PMJM/Other  
TAHS 65412-2007-TA-0368

APR 11 2007

Janetta Shepard  
Walsh Environmental Scientists and Engineers, LLC  
4888 Pearl East Circle, Suite 108  
Boulder, Colorado 80301

Dear Janetta Shepard:

This responds to your report of March 29, 2007 requesting site disqualification under the authority conferred to the U.S. Fish & Wildlife Service (Service) by the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*). The Service has reviewed the *Site Disqualification Report Preble's Meadow Jumping Mouse; Sterling Ranch Property; El Paso County, Colorado*.

Based on the information provided, the Service agrees that a population of Preble's is not likely to be present in the area. The Service concludes that the development of this site is not likely to adversely affect Preble's. Thus this site is disqualified for consideration under ESA.

On February 2, 2005 the U. S. Fish and Wildlife Service issued a 12-Month finding on a petition to delist Preble's. Because of the complexity involved, the Service has extended its original proposal. Until a final determination is made, Preble's remains protected under ESA.

Please note that this clearance is valid for one year from the date of this letter. Should additional information regarding listed or proposed species become available, this determination may be reconsidered under the ESA. If the proposed project has not commenced within one year, please contact the Colorado Field Office to request a clearance extension.

If we can be of further assistance, please contact Adam Misztal, of my staff, at (303) 236-4753 or at email: [adam\\_misztal@fws.gov](mailto:adam_misztal@fws.gov).

Sincerely,

Susan C. Linner  
Colorado Field Supervisor



**Appendix II**

*Walsh Site Disqualification Report*

**SITE DISQUALIFICATION REPORT  
PREBLE'S MEADOW JUMPING MOUSE**

**STERLING RANCH PROPERTY  
EL PASO COUNTY, COLORADO**

Prepared for:

U.S. Fish and Wildlife Service  
Attn: Adam Misztal  
Ecological Services  
P.O. Box 25486, DFC (MS 65412)  
Denver, Colorado 80225-0486

Prepared on behalf of:

Morley-Bentley Investments, LLC  
C/o Virgil A. Sanchez, P.E.  
M&S Civil Consultants, Inc.  
15 North Nevada  
Colorado Springs, CO 80903

Prepared by:

Walsh Environmental Scientists and Engineers, LLC  
4888 Pearl East Circle, Suite 108  
Boulder, Colorado 80301  
(303) 443-3282

March 29, 2007

## INTRODUCTION

This Site Disqualification Report presents the results of an evaluation of habitat suitability for Preble's meadow jumping mouse (*Zapus hudsonius preblei*) conducted at the Sterling Ranch property in El Paso County, Colorado. The habitat evaluation was performed on March 14, 2007 by Janetta Shepard, Restoration Ecologist, and Maureen O-Shea-Stone, Senior Botanist, of Walsh Environmental Scientists and Engineers, LLC on behalf of Morley-Bentley Investments, LLC, the property owner. The study was conducted in coordination with a habitat assessment, and included an evaluation for the potential presence of Federal and State-listed threatened and endangered species, and migratory bird habitat.

The approximate 1600-acre property is comprised of two separate parcels north of the Woodmen Heights Development east of Colorado Springs in El Paso County. The larger parcel is loosely bounded by Vollmer Road to the west, Arroyo Lane to the north, Banning Lewis Parkway to the east and Woodmen Heights to the south. The smaller parcel, which is located directly west of the large parcel, is bounded by Vollmer Road to the east, Black Forest Road to the west, and undeveloped land that is slated for future development to the north and south. The main branch and a channel of Sand Creek run from north to south through the larger parcel, and a reach of Cottonwood Creek flows across the northwestern corner of the smaller parcel. Geographically the property is located in the SE  $\frac{1}{4}$  of Section 28, the middle of Section 27, the SE  $\frac{1}{4}$  of Section 32, Section 33, and the W  $\frac{1}{2}$  of Section 34, Township 12 South, Range 65 West, in El Paso County, Colorado. Average Universal Transverse Mercator (UTM) coordinates for the property (calculated on the Sand Creek channel just west of the cement plant facilities) are Northing 4286308 and Easting 530843. The locations of the properties are illustrated on the attached Site Location Map (Figure 1), and photos of the properties are attached to the report.

The Site is characterized by gently rolling hills interspersed with expanses of fairly level ground. Vegetation is primarily comprised of prairie grasses and forbs and the presence of woody vegetation is limited to the riparian corridors and floodplains of Sand Creek and Cottonwood Creek. Weedy species account for less than 5 percent of groundcover on the large parcel, but are more abundant on the smaller, western parcel. The banks of the Sand Creek channel are unstable and deeply incised in many locations. As a result, the banks are perched high above the channel and primarily vegetated with a sparse cover of upland grasses and forbs supplemented intermittently by single rows of plains cottonwood (*Populus deltoides*) trees and pockets of sandbar willow (*Salix exigua*) shrubs. Three on-line ponds occur within the property boundaries. Two of the ponds are situated within visual distance of each other on wide bends in the channel near the northern property boundary. The downstream pond, which is situated west of the cement plant operations, is the largest of the three ponds.

The majority of the smaller, west parcel is sparsely vegetated or devoid of vegetation as a result of the hard surface road leading into the gravel stockyard, and the large piles of sand and gravel scattered across the eastern two-thirds of the parcel. An expansive restoration area is situated across a large, earthen berm that flanks the south bank of Cottonwood Creek. The berm is planted with evergreen trees that are loosely planted in staggered rows around the sides of the berm. Vegetation along the creek corridor and floodplain is diverse and well-developed, and primarily consists of shrubs, trees and cattails. The floodplain is broad and situated at the base of very steep-sides slopes. An on-line pond that appears to be perched is situated at the upstream property boundary. The pond was full at the time of the assessment and water was flowing steadily in the channel.

The property is undeveloped with the exception of small buildings associated with the cement plant operation on the larger parcel and the storage yard facility on the smaller parcel.

The vegetation communities in the upland meadow areas of the larger parcel are dominated by fescue (*Festuca arizonica*) and blue grama (*Chondrosium gracili*), with smaller quantities of the following species occurring throughout: three-awn (*Aristida purpurea*), nodding buckwheat (*Eriogonum cernuum*), big bluestem (*Andropogon hallii*), smooth brome (*Bromopsis inermis*), western wheatgrass (*Pascopyron smithii*), golden aster (*Heterotheca villosa*), fringed sage (*Artemisia frigida*), buffalograss (*Buchloe dactyloides*), and other short-grass prairie species commonly occurring in the eastern plains of El Paso County. Vegetation associated with the Sand Creek channel includes common cattail (*Typha latifolia*), redtop (*Agrostis stolonifera*), Baltic rush (*Juncus balticus*), wild rye (*Elymus canadensis*), sedges (*Carex* spp.), mullein (*Verbascum thaspsus*), woods rose (*Rosa woodsii*), coyote willow and plains cottonwood trees.

Vegetation within the smaller parcel is sparse and weedy near the entrance gate and consists of upland grasses and forbs. A reclamation area constructed across a man-made earthen berm is planted with a grove of pinyon pine (*Pinus edulis*) trees. Vegetation at the base of the berm is dominated by clusters of yucca (*Yucca glauca*) plants with an understory of upland grasses. Vegetation within the Cottonwood Creek floodplain is well-developed and lush, and consists of common cattail, coyote willow and mountain willow (*Salix monticola*) shrubs, thickets of chokecherry (*Prunus americana*) and snowberry (*Symphoricarpos occidentalis*) shrubs, and plains cottonwood and narrow-leaf cottonwood (*Populus angustifolia*) trees.

Waterbodies on the property consist of a reach of the main branch of Sand Creek channel (including three on-line ponds), and a tributary to the west that flow from north to south; and a reach of Cottonwood Creek that flows across the northwest corner of the smaller parcel in a general northeast to southwest direction. The attached Site Location Map defines the boundaries of the excluded reach.

## **JURISDICTIONAL WETLANDS**

Jurisdictional wetlands and waters of the U.S. on the 1,600-acre Sterling Ranch Property are present along the main branch and tributary of Sand Creek on the larger parcel, and along the reach of Cottonwood Creek that crosses the northwest corner of the smaller parcel.

## **BASIS FOR DISQUALIFICATION**

Previous trapping efforts and habitat surveys for the Preble's meadow jumping mouse in this area have consistently resulted in no finding. As a result the U.S. Fish and Wildlife Service (USFWS) have issued block clearances for large segments of Sand Creek and Cottonwood Creek. The reaches of these creeks occurring on the Sterling Ranch property are situated in close proximity, but just outside of, the clearance areas. The clearance for Sand Creek ends approximately a half mile south of Woodmen Road. However, the Sterling Ranch property is separated from Woodmen Road by the Woodmen Heights Subdivision, which is currently under construction and has been previously cleared for Mouse habitat. The clearance for Cottonwood Creek ends on the west side of Black Forest Road, but the reach of the creek that crosses the corner of the small parcel begins directly across the roadway on the east side of Black Forest Road. Upstream habitat on Sand Creek is indistinguishable from the downstream reaches in that flows are minimal and ephemeral, vegetation is sparse with nominal shrub and tree cover, and adjacent uplands are comprised entirely of grassy upland fields.

The well-developed riparian characteristics along Cottonwood Creek are mirrored in the upstream reaches, north of the property. However, residential and commercial developments (a mixture of previously established and those under construction) begin to increase north of the smaller parcel and the

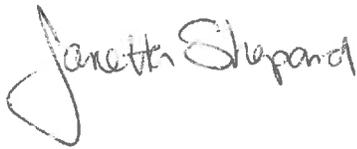
presence of undeveloped lands diminishes. Therefore, this potential habitat is disconnected and isolated from other potentially viable habitat.

Based on the proximity to established block clearance areas and properties that have previously been cleared by the USFWS, and the consistent absence of findings from previous area surveys, it is reasonable to conclude that Preble's meadow jumping mice are unlikely to occur on the Sterling Ranch property (either as residents or transients), and that the proposed development plans will not adversely affect individuals, populations, or occupied habitat.

Walsh is herein requesting a formal written site disqualification for the absence of the Preble's mouse at the Sterling Ranch property.

Regards,

**Walsh Environmental Scientists and Engineers, LLC**

A handwritten signature in black ink that reads "Janetta Shepard". The signature is written in a cursive style with a large, looping initial "J".

Janetta Shepard, PWS  
Restoration Ecologist

**Attachments:**

Figure 1 – Site Location Map  
Survey Field Data Compilation Form  
Photo Documentation (4 pages)

# STERLING RANCH

N.T.S.

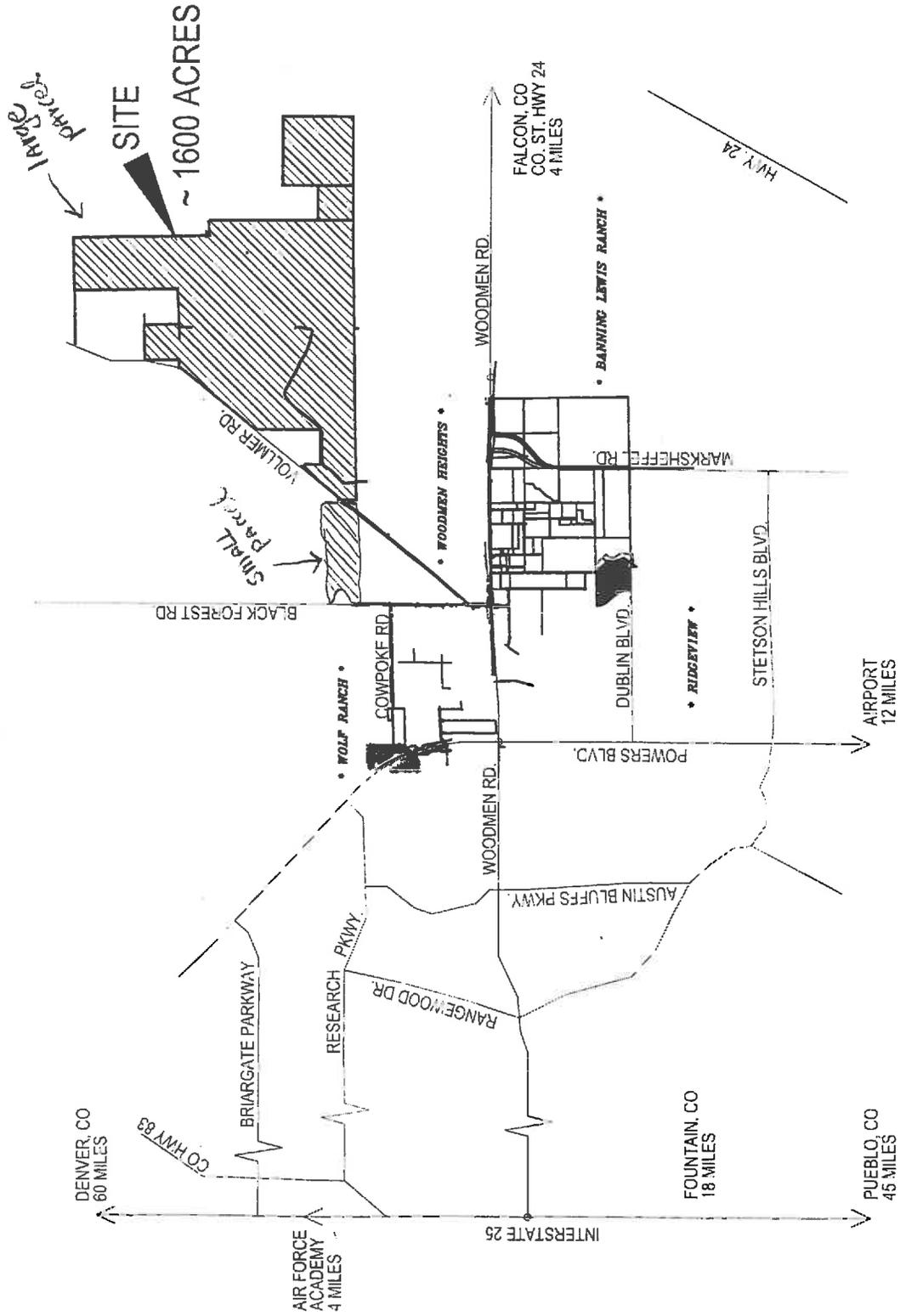


Figure 1 - Site Location Map

*Zapus hudsonius preblei*, Preble's Meadow Jumping Mouse

Survey Field Data Compilation Form

TRAPPING SURVEY       EVALUATED, NOT TRAPPED

Fill out both sections 1 and 2 if trapping survey, fill out only section 1 if habitat evaluation (ie. not trapped).

SECTION 1

Surveyor:

Organization/Company Walsh Environmental Scientists & Engineers LLC  
Full Name(s) Janetta Shepard

Location:

Descriptive Site Name (creek, nearby road intersection, etc.)

Sand Creek and Cottonwood Creek

U.S.G.S. Quad Name FALCON NW County EL PASO Elevation AVA 7126

Township(s) 12 South Range(s) 65 West Section(s) 27, 28, 32-34

1/4 Section(s) \_\_\_\_\_

UTM Coordinates, Zone 13 Northing 4286308 Easting 530843

Directions to Location East on Woodmen Rd to Black Forest, north to

small parcel entrance; Woodmen Rd east to Mahawk, north to large parcel.

Land Ownership M+S Civil Consultants, Inc.

Habitat:

General Habitat Description

Shortgrass prairie, sparsely wooded sand ck corridor; multi-

strata cottonwood ck corridor w/ sparse uplands adjacent

Dominant Plant Community shortgrass prairie

Drainage Type: Perennial Stream  Ephemeral Stream  Pond/Lake \_\_\_\_\_

Ditch \_\_\_\_\_ Other Cottonwood ck SAND ck

SECTION 2:

*Z. h. preblei* found? Yes  No  Dates of Survey \_\_\_\_\_

Trapping Information:

Type of Traps \_\_\_\_\_ Type of Bait \_\_\_\_\_

% Available (unsprung) \_\_\_\_\_ Number of Nights Trapped \_\_\_\_\_

Total Trapnights \_\_\_\_\_

Weather conditions prior to and during survey \_\_\_\_\_

Associated Animal Species (especially urban predators, rats, house mice)

\_\_\_\_\_



**Photo 1- Overview of short-grass prairie including an example of the isolated swales**



**Photo 2 – View of the northeastern corner of the large parcel looking at the series of isolated swales that have formed in low-lying areas within the prairie grassland**



Photo 3 – A reach of the Sand Creek channel looking downstream from property fenceline.



Photo 4 – View of the large downstream pond being fed by the Sand Creek channel.



**Photo 5 – Overview of Cottonwood Creek at the smaller western parcel.**



**Photo 6 - Looking northwest across the ponded area on Cottonwood Creek at the smaller western parcel.**



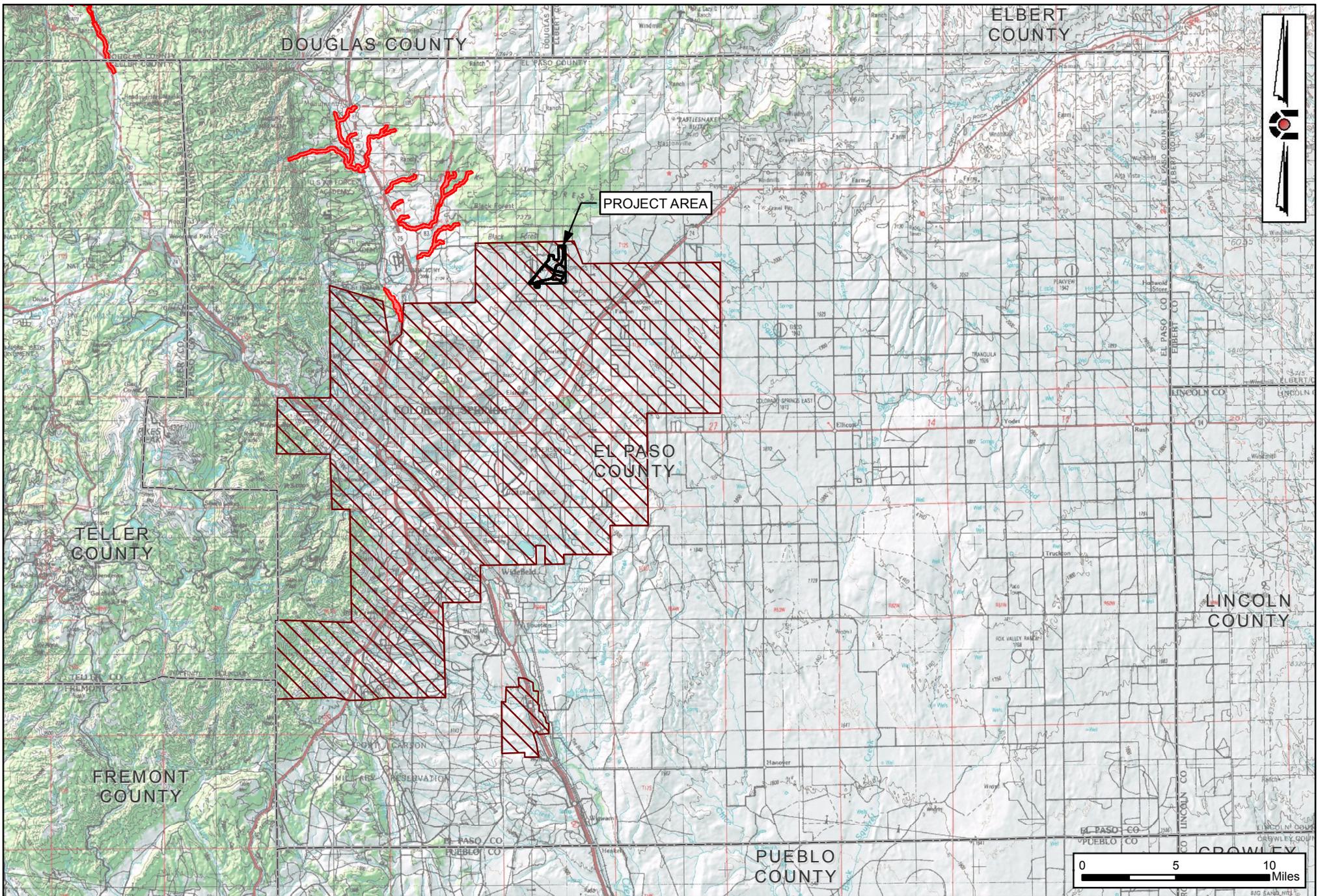
Photo 7 – Upland fields and overview of upland grassland above Cottonwood Creek



Photo 8 – Cement company stockyard that comprises the majority of the smaller parcel.



**Appendix III**  
*PMJM Habitat Map*



-  Project Area
-  USFWS PMJM Critical Habitat
-  USFWS PMJM Block Clearance Area

**Sterling Ranch**  
**Preble's Meadow Jumping Mouse Habitat Map**  
 El Paso County, Colorado