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# Species of Concern Federally Listed, State Wildlife Listed & Comprehensive Plan Mapped Species

Hogan Pancost Property  
Boulder County, Colorado

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# 1.0 Introduction

BCC, LLC has plans to develop the 21.82 acre Hogan Pancost property located in Boulder County, Colorado, southwest of the East Boulder Community Park. 55<sup>th</sup> Street bisects the property to create a 2.73 acre East Parcel and a 19.09 acre West Parcel. Specifically, the property is located in parts of Sections 3 and 4 of Township 1 North and Range 70 West in Boulder County (Figure 1).

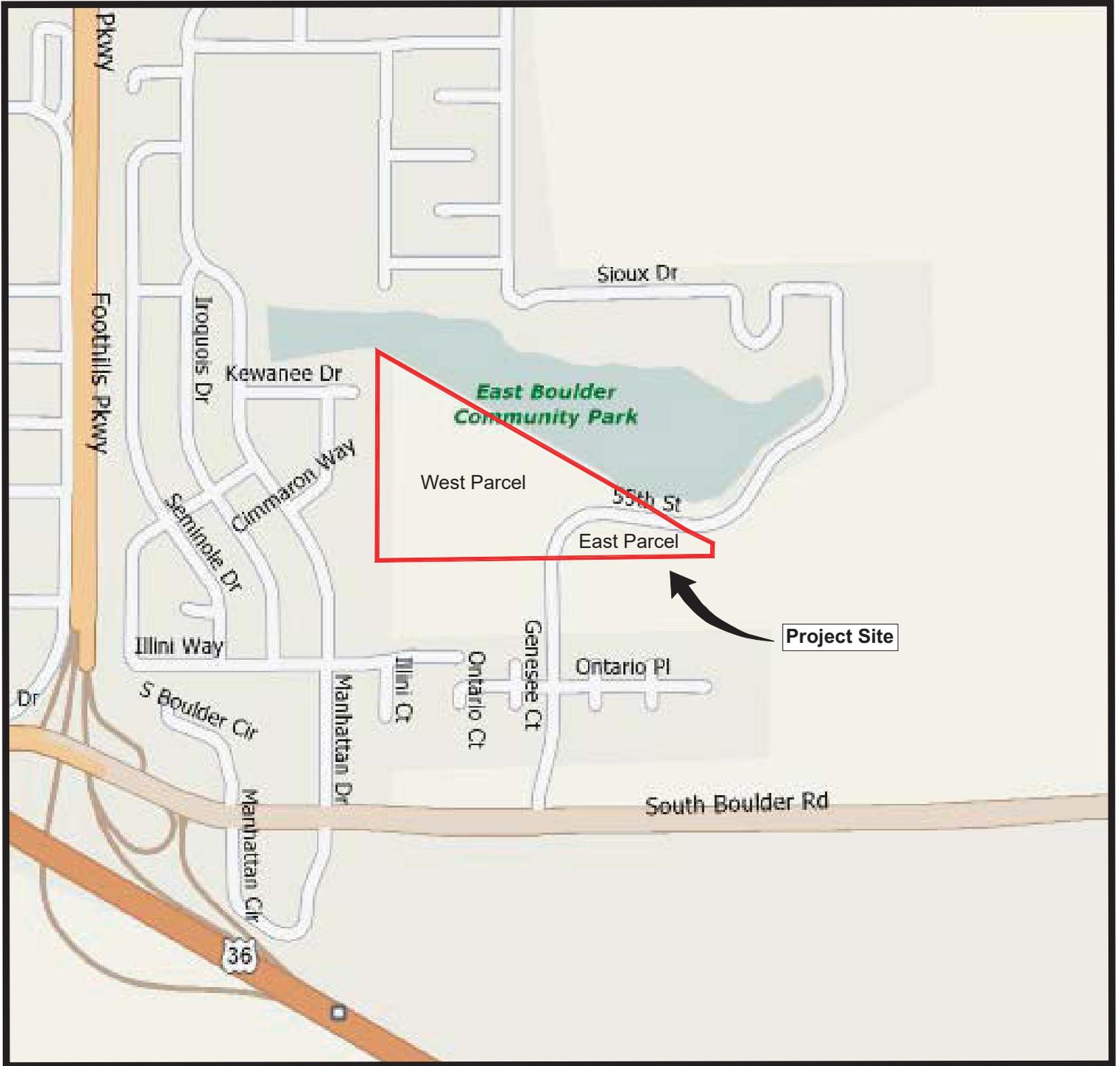
BCC, LLC is evaluating a potential development for the West Parcel; therefore, a Habitat Assessment was completed for federally listed threatened, endangered, and candidate species, as well as wildlife listed by Colorado Parks and Wildlife (CPW) as threatened, endangered or of special concern. Please note, CPW does not address plants of special concern. Species listed in the Boulder County Comprehensive Plan as critical are also addressed. Section 2.0 briefly describes the existing conditions of the project site, and Section 3.0 addresses the federally listed plant and wildlife species with potential habitat in Boulder County. Section 4.0 evaluates the habitat for the state-listed wildlife species with potential habitat in Boulder County. Section 5.0 addresses the Boulder County Comprehensive Plan critical species. Please note, all Figures and Tables are included with the text.

## 2.0 Environmental Setting

### 2.1 Land Use, Topography & Irrigation Features

Both the West and East parcels are undeveloped except for several small sheds on the West Parcel associated with an agricultural land use. The agricultural land use of the project site extends back to the settlement era in the late 1800's (Hogan, 2008). Recent agricultural use includes livestock grazing. The West Parcel is currently being grazed by horses. Historically, the Hogan Pancost property was extensively flood irrigated beginning with settlement in the late 1800's (Hogan, 2008). Flood irrigation of the West Parcel was terminated approximately six years ago, and the East Parcel is typically flood irrigated twice per year from the property to the south. The West Parcel has a population of black-tailed prairie dogs (*Cynomys ludovivianus*). The prairie dogs ground disturbances have increased the abundance of noxious and undesirable weeds.

Several irrigation ditches and laterals are present on the project site. The Dry Creek Ditch #2 (Ditch) is located along the western boundary of the West Parcel, and the CD Bodam Lateral (Lateral) is located along the southern boundary of the West Parcel. The Super-phosticle Lateral flows northwest across the East Parcel and across the easternmost portion of the West Parcel, then continues northwest just outside the northern boundary of the West Parcel. A small unnamed lateral is present along the southern boundary of the East Parcel. There are no streams on the project site, however South Boulder Creek is located approximately 180 feet east of the East Parcel. A small irrigation water storage pond occurs on the property to the south and extends into the East Parcel near the Super-phosticle Lateral. The West Parcel has a vertical relief of 13 feet as it ranges from a high of 5,325 feet in the south to a low of 5,312 feet in the northwest. The West Parcel is characterized by numerous small swales 12-24 inches deep. The relatively flat East Parcel has a vertical relief of six feet and elevations which range from a high of 5,325 feet in the southwest to a low of 5,319 feet in the north along 55<sup>th</sup> Street.



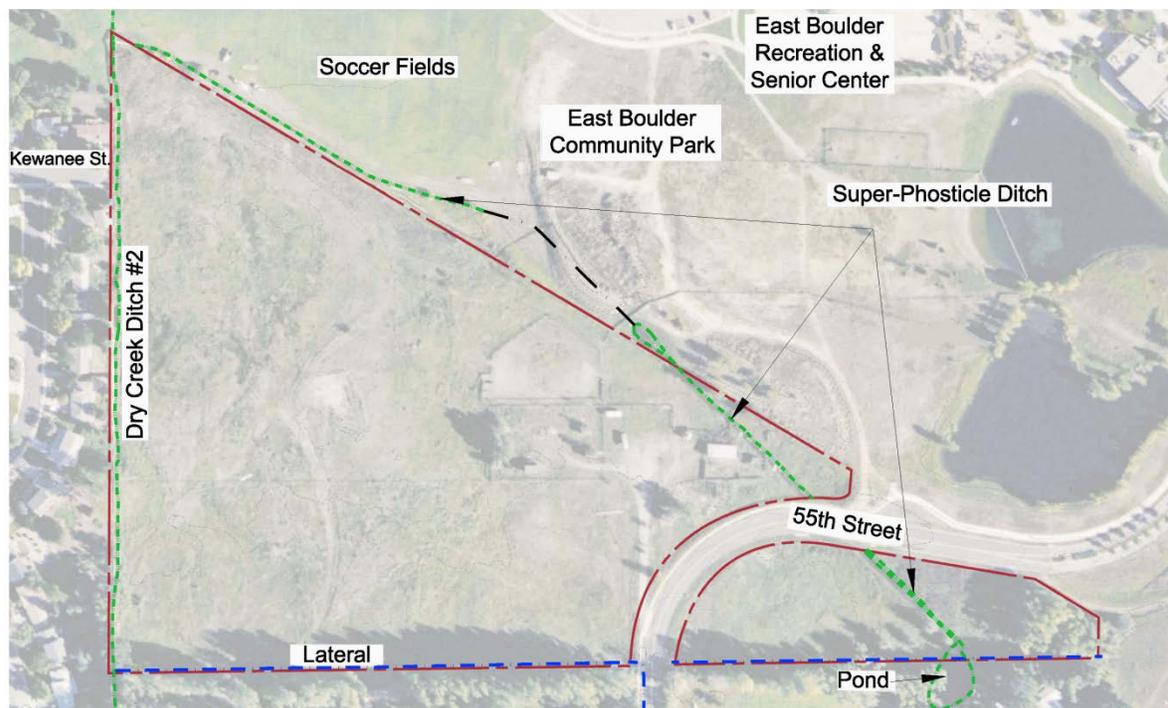
BASE: Map Data Mapquest 2008 NAVETQ or TeleAtlas

**FIGURE 1. Vicinity Map  
Hogan Pancost Property**



Scale 1" = 600'





Hogan Pancost Property  
Ditches and Laterals

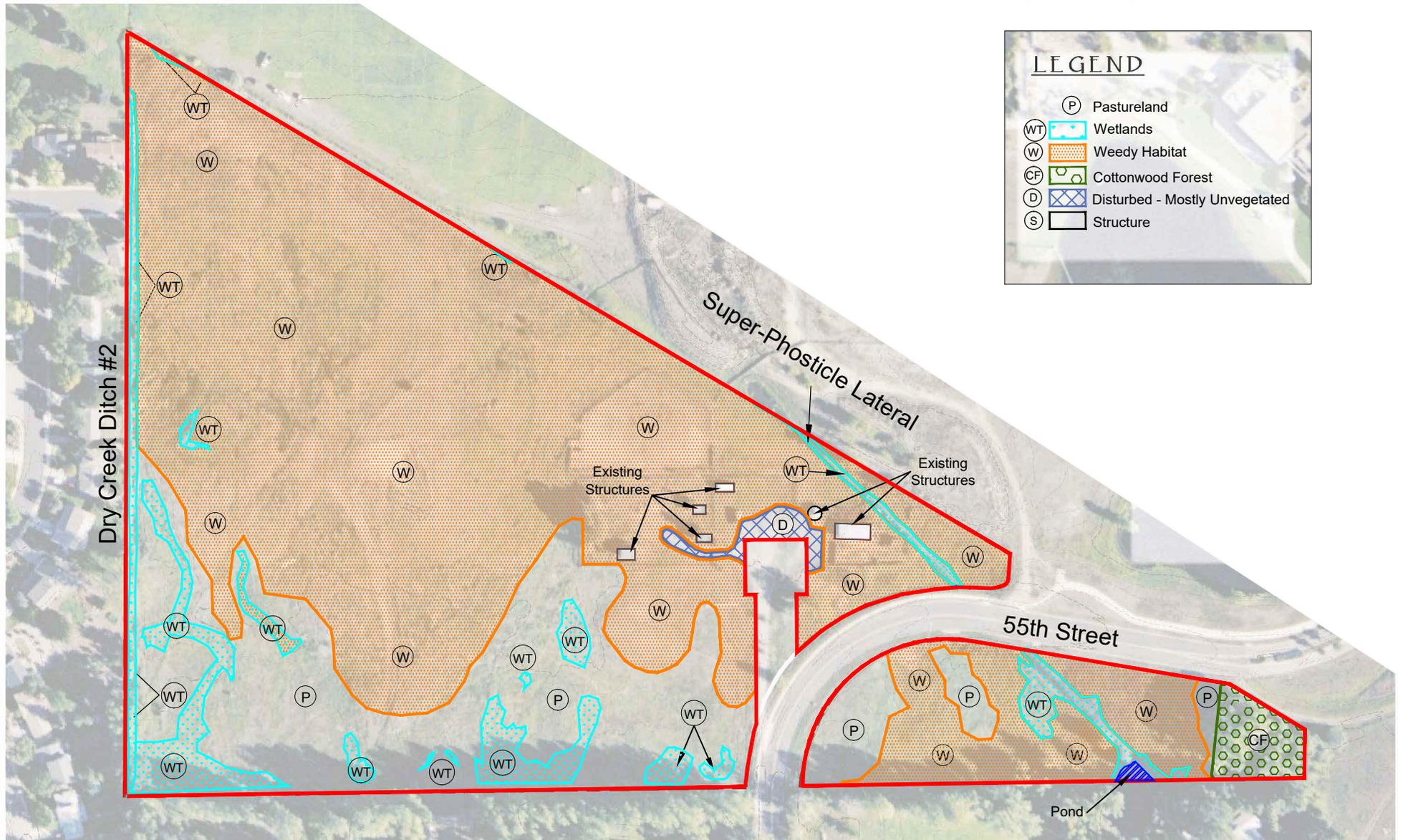
## 2.2 Vegetation

The vegetation of the East and West Parcels is characterized by 5.05 acres of a degraded agricultural seeding, 14.69 acres of Colorado noxious and other weeds, 0.33 acres of plains cottonwood trees (*Populus deltoides*) on the east end of the East Parcel, and 1.59 acres of man-induced wetlands (Figure 2). The upland pasture is best developed in swales just north of the Lateral where they were historically flood irrigated. Please note, this Lateral is lined and the flood irrigation has been terminated. The swale areas are characterized by agricultural and native wetland and facultative plants such as meadow fescue (*Festuca pratensis*), redtop (*Agrostis gigantea*), Baltic rush (*Juncus arcticus subsp. ater*) and numerous upland species, including timothy (*Phleum pratense*), Kentucky bluegrass (*Poa pratensis*), chicory (*Cichorium intybus*), narrow-leaf birds-foot trefoil (*Lotus tenuis*), curly dock (*Rumex crispus*), and red clover (*Trifolium pratense*).

Weedy areas occur in the slightly higher elevations of the project site where prairie dogs have created disturbed habitats and in mesic areas on the East Parcel. These areas have a vegetation cover composed of a diversity of Colorado state listed noxious weeds and other introduced plants. The most abundant weeds in the West Parcel include Scotch thistle (*Onopordum acanthium*), diffuse knapweed (*Acosta diffusa*), Canada thistle (*Cirsium arvense*), mullein (*Verbascum thapsus*), chicory, and field bindweed (*Convolvulus arvensis*). The East Parcel has large stands of teasel (*Dipsacus fullonum*) intermixed with the wetland plants, as well as stands of Canada thistle and a few Russian olive (*Elaeagnus angustifolia*) trees.

Wetlands on the project site are dominated by graminoids and perennial forbs, and in places woody shrubs. Major graminoids include redtop, meadow fescue, American mannagrass (*Glyceria grandis*), Baltic rush, Nebraska sedge (*Carex nebrascensis*), clustered field sedge (*Carex praegracilis*), and prairie cordgrass (*Spartina pectinata*). Common forbs present include Macoun's buttercup (*Ranunculus macounii*), water smartweed (*Persicaria amphibia*), largeleaf avens (*Geum macrophyllum*), field mint (*Menta arvensis*), and white panicle aster (*Aster lanceolatus ssp. hesperius*). Many of the wetlands, especially on the drier edge, have introduced weeds including Canada thistle, teasel, prickly lettuce (*Lactuca serriola*), and others. Sandbar willows (*Salix exigua*)

Figure 2. Vegetation Type Map



Scale: 1" = 200 ft  
 Contour Interval: 1 ft  
 Date: August 2016

**BOULDER CREEK COMMONS  
 VEGETATION TYPE MAP**

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occur along the irrigation ditches. Less abundant woody plants include chokecherry (*Prunus virginiana* var. *melanocarpa*), Russian olive, plains cottonwood (*Populus deltoides*), and crack willow (*Salix fragilis*).

Finally, a small stand of plains cottonwood trees occur in the eastern portion of project area. The understory is comprised of upland and facultative plants such as smooth brome (*Bromus inermis*), meadow fescue, Canada goldenrod (*Solidago canadensis*), and goldenbanner (*Thermopsis divaricarpa*).

### 3.0 Federal Threatened, Endangered and Candidate Species

The U.S. Fish & Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) website identifies the federally listed threatened, endangered, and candidate species with potential habitat in Boulder County or that may be impacted by water depletions within the County (USFWS, 2016). See Appendix A. As documented by Table 1, the Boulder County list includes two fish, four birds, two mammals, and three plants. Sources of information on the habitat requirements for wildlife species listed in Table 1 include the Colorado Breeding Bird Atlas (Kingery, 1998), Mammals of Colorado (Armstrong et al., 2011), and Amphibians and Reptiles in Colorado (Hammerson, 1999). Online resources consisted of the CPW website, USDA Forest Service species accounts, and NatureServe (2016). The likelihood of presence or absence was based on each species' specific habitat requirements and the current habitat types found on each parcel. Five of these species, including the pallid sturgeon (*Scaphirhynchus albus*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), least tern (*Sterna antillarum*) and the western prairie fringed orchid (*Platanthera praeclara*) are only impacted by water depletions in the South Platte River and do not occur within the county. The proposed development will not result in any water depletions not historically allocated; therefore, these five species will not be impacted. The remaining species listed in Table 1 are discussed below. Please note, the USFWS does not identify any federal candidate species with potential habitat in Boulder County.

#### 3.1 Wildlife

##### 3.1.1 Greenback Cutthroat Trout

The greenback cutthroat trout (*Oncorhynchus clarki stomias*) occurs east of the Continental Divide within the Arkansas and South Platte River watersheds. The trout's habitat includes swift moving, cold mountain streams and mountain lakes. Historically, it also occurred in gravelly foothills streams but it has been largely extirpated from these habitats due to degradation and displacement by introduced trout species. The existing populations within the South Platte River drainage are located in protected environments within Rocky Mountain National Park and in the upper headwaters of the tributary system. The trout requires cold, clear water with low levels of sediment and pollution, stable stream banks, well distributed pools, and abundant stream cover.

There are no streams on the project site, therefore it does not provide habitat for the greenback cutthroat trout. Moreover, the portion of South Boulder Creek located east of the East Parcel does not support the greenback cutthroat trout and is well below its elevational range distribution. Proposed development of the Hogan Pancost property will not impact the greenback cutthroat trout.

##### 3.1.2 Mexican Spotted Owl

Mexican Spotted Owl (*Strix occidentalis lucida*) habitat includes mature, old-growth forests of white pine (*Pinus strobes*), Douglas fir (*Pseudotsuga menziesii*) ponderosa pine (*Pinus ponderosa*), and steep slopes and contours with rock cliffs. The Hogan Pancost property does not provide any habitat for the Mexican Spotted Owl.

**TABLE 1**  
**Federal Threatened, Endangered and Candidate Species**  
**Boulder County, Colorado**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal Status</u>
<b>Fish</b>		
<i>Oncorhynchus clarki stomias</i>	Greenback cutthroat trout	Threatened
<i>Scaphirhynchus albus</i> *	Pallid sturgeon	Endangered
<b>Birds</b>		
<i>Charadrius melodus</i> *	Piping plover	Threatened
<i>Grus americana</i> *	Whooping crane	Endangered
<i>Sterna antillarum</i> *	Least tern (interior population)	Endangered
<i>Strix occidentalis lucida</i>	Mexican spotted owl	Threatened
<b>Mammals</b>		
<i>Lynx canadensis</i>	Canada lynx	Threatened
<i>Zapus hudsonius preblei</i>	Preble's meadow jumping mouse	Threatened
<b>Plants</b>		
<i>Gaura neomexicana</i> <i>ssp. coloradensis</i>	Colorado butterfly plant	Threatened
<i>Platanthera praeclara</i> *	Western prairie fringed orchid	Threatened
<i>Spiranthes diluvalis</i>	Ute ladies' tresses orchid	Threatened

\*Species potentially impacted by water depletions to the South Platte River.

Source: U.S. Fish & Wildlife Service, 2016.

### 3.1.3 Canada Lynx

The project site is well below the lower elevational limit (8,000 feet) for the Canada lynx (*Lynx canadensis*), is within a developed urban area, and does not contain spruce/fir habitat. Therefore, the Hogan Pancost property does not provide habitat for the Canada lynx.

### 3.1.4 Preble's Meadow Jumping Mouse

The Preble's meadow jumping mouse (*Zapus hudsonius preblei* – Preble's), is a sub-species of the meadow jumping mouse and is confined to the Front Range of Colorado and the southeastern portion of Wyoming. On 13 May 1998 the USFWS listed the Preble's as a threatened species under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et. seq.). Habitat requirements and life history attributes of the Preble's in Colorado suggests that Preble's are found in moist areas along watercourses or in lush, rank herbaceous understories of wooded areas (Fitzgerald et al., 1994; Meaney et al., 1997). Typical landscape features where Preble's occurs are open wet meadow, low undergrowth with a canopy that provides sufficient cover, and where tall shrubs provide adequate cover. Preble's uses upland habitats to a greater degree than previously assumed (Shenk, 2000). Shenk and Eussen (1998) reported that Preble's do not have a preference for one plant species in particular, but instead favor structurally diverse habitat that provides cover and food throughout its life cycle. Available information suggests that Preble's does not occur above 7,600 feet in Colorado and 8,100 feet in Wyoming (USFWS, 2000).

Habitat for the Preble's meadow jumping mouse along the Front Range of Colorado and into Wyoming typically consists of a matrix of riparian vegetation and associated upland grasslands and shrubs (Fitzgerald et al., 1994; Shenk and Sivert, 1999). These systems are relatively narrow and represent a small percentage of the landscape (USFWS, 2002). Riparian vegetation typically is varied with a mixed overstory comprised of willows (*Salix* spp.) and cottonwoods (*Populus* spp.) and an understory of scattered shrubs including snowberry (*Symphoricarpos* spp.). Two major habitat components appear necessary; open water and dense cover.

In addition to these habitat features, suitable habitat must also provide requirements for survival throughout the life cycle (Shenk, 1998). This means that habitat for the active period and hibernation period are essential. Active period habitat must provide areas where reproductive activities and daily survival can occur. Hibernation habitat is not just that habitat in which hibernacula are created, but also that provides adequate food sources for fat storage during hibernation. Habitat for active and hibernating periods does not have to occur in the same location, but must be connected.

Threats to Preble's and their habitat include alteration, degradation, loss, and fragmentation resulting from urban development, flood control, water development, agriculture, and other human land uses. Habitat destruction may impact individual Preble's directly or by destroying nest sites, food resources, and hibernation sites, by disrupting behavior, or by forming a barrier to movement (USFWS, 2002). Invasive non-native and noxious weeds can alter habitat and decrease its value to the point that it is not suitable and thus unusable. Habitat is maintained over time along rivers and streams by a natural flooding regime that periodically scours riparian vegetation, reworks stream channels, floodplains, and benches, and redistributes sediments such that a pattern of appropriate vegetation is present along river and stream edges and throughout floodplains (USFWS, 2002).

Primary habitat constituent elements (Ryon, 1996; Clippinger, 2002; USFWS, 2002) for Preble's include:

- Dense riparian vegetation consisting of grasses, forbs, and shrubs in areas along rivers and streams that provide open water through the Preble's active season.
- Complex plant communities with high species diversity.
- Adjacent floodplains and vegetated uplands with limited human disturbance.

- Areas that provide connectivity between and within populations.
- Dynamic geomorphological and hydrological processes typical of systems within the range of Preble's; i.e., those processes that create and maintain river and stream channels, floodplains, and floodplain benches, and promote patterns of vegetation favorable to Preble's.

Preble's can occur in areas where there is suitable riparian habitat with little upland habitat. However, they are never found in areas with suitable upland habitat and no suitable riparian habitat. The project area, the West Parcel in particular, has very marginal riparian habitat associated with the CD Bodam Lateral, and none along the Super-phosticle Lateral. The East Parcel does provide suitable riparian habitat, but no access to suitable upland habitat (Figure 2).

Because of the nearby captures of Preble's, the question of the project area being a movement corridor between suitable habitats is a consideration. However, the project area cannot function as a movement corridor because of the lack of suitable habitat along the irrigation ditches, and most importantly, there is no viable habitat north, south, or west of the project area for Preble's to migrate into.

Designated Critical Habitat/Occupied Habitat. South Boulder Creek is identified by USFWS as Designated Critical Habitat. Because Preble's use uplands away from stream corridors, all uplands within 300 feet of the center of the stream have been included as a Critical Habitat buffer. The extreme south-east corner of the project area is within approximately 30 feet of the upland buffer (it is important to note that the land within the buffer to the east of the project area is developed, with a house and miscellaneous outbuildings present). All upland areas within the mapped buffer may not be suitable habitat (e.g. prairie dog colonies, disturbed areas, etc.) capable of adding important Preble's life history components.

In 2014, the most recent trapping conducted, the City of Boulder had a Preble's capture approximately 246 feet east of the eastern edge of the project area along the west side of South Boulder Creek (Swanson, 2016). Several individuals were captured along South Boulder Creek and all captures occurred within approximately 50 feet of the creek (most between 20-30 feet from the creek).

Consultation History. Several previous habitat assessments and USFWS concurrence have been completed for the project site (Appendix B). These assessments were conducted in 2003, 2007 and 2008, and each assessment was concurred with by the USFWS that the project area was not capable of supporting Preble's and any development of the project area would not harm Preble's.

A Preble's trapping survey per USFWS 2004 protocol was completed on the project site during the nights of August 21-24, 2016 by Wildlife Specialties, LLC (2016). No Preble's were captured and it was concluded that the project site does not provide suitable habitat for the Preble's. The trapping survey report has been sent to the USFWS for their review. See Appendix B. The USFWS will likely agree that development of the project area would result in "no effect" to Preble's.

## 3.2 Plants

### 3.2.1 Ute Ladies' Tresses Orchid & Colorado Butterfly Plant

A Habitat Assessment and Survey for the Ute ladies' tresses orchid (*Spiranthes diluvialis*) and the Colorado butterfly plant (*Gaura neomexicana ssp. coloradensis*) was conducted in August 2016 by Heather Houston of Western Ecological Resource, Inc. (WER, 2016). Neither of these plants were found and it was concluded that the habitat for these plants is not suitable.

## 4.0 State of Colorado Threatened, Endangered, and Special Concern Wildlife

Colorado Parks and Wildlife has identified 74 wildlife species as being threatened, endangered, or of special concern (Appendix C). However, only 32 of these species have potential habitat in Boulder County or would be potentially impacted by projects in Boulder County that would result in water depletions to the South Platte River in Nebraska (Table 2). These include two amphibians, twelve birds, nine fish, six mammals, one reptile, and two mollusks. The potential for these species or their habitats to be present on the Hogan Pancost project site is evaluated below. Please note, CPW does not identify state endangered, threatened, or special concern plant species.

### 4.1 Amphibians

Two species of state-listed amphibians could potentially occur within Boulder County: the boreal toad (*Bufo boreas boreas*) and the northern leopard frog (*Rana pipiens*). The Hogan Pancost property is below the lower elevational limit (7,500) of the boreal toad and therefore does not provide suitable habitat for this species. Some northern leopard frog breeding does occur east of the project area and there is potential habitat associated with the small irrigation pond at the southern boundary of the East parcel. However, the pond has an irregular water supply due to seasonal changes in irrigation flow. The pond was reviewed daily during the week of August 21, 2016 for any evidence of use by Northern Leopard Frogs and none was noted. The site is unlikely to support the northern leopard frog.

### 4.2 Birds

The CPW list includes nine bird species that could potentially occur within Boulder County and three birds downstream in the Platte River ecosystem that are affected by water depletions of upstream projects. However, due to the degraded plant community, the agricultural land use history, and the proximity of existing developments and the recreation center, the Hogan Pancost project site is most suitable for habitat generalists and is unlikely to provide nesting habitat for most of the state-listed birds. Due to the presence of black-tailed prairie dogs, there is a potential for the site to support burrowing owls (*Athene cunicularia*), and it is potential foraging habitat for raptors including ferruginous hawks (*Buteo regalis*) and bald eagles (*Haliaeetus leucocephalus*). However, burrowing owls were not present during the 2016 nesting season and no raptor nests are located on or adjacent to the project site. The project site existing habitat is too degraded, urbanized, and does not provide suitable habitat for the western snowy plover (*Charadrius alexandrinus nivosus*), whooping crane (*Grus americana*), greater sandhill crane (*Grus canadensis tabida*), Mexican spotted owl (*Strix occidentalis lucida*), the peregrine falcon (*Falco peregrinus anatum*), piping plover (*Charadrius melodus circumcinctus*), mountain plover (*Charadrius montanus*), long-billed curlew (*Numenius americanus*), or the least tern (*Sterna antillarum*). Furthermore, there would be no water depletions beyond those historically allocated to the South Platte River resulting from development of the Hogan Pancost property, therefore it will not impact populations of the piping plover, least tern, or whooping crane located downstream in the South Platte ecosystem.

### 4.3 Fish

Nine fish species listed by CPW may potentially occur within the South Platte River drainage within or near Boulder County. However, most of these fish have a very limited distribution (see Table 2) and there is no suitable habitat for these fish on the project site as there are no streams. The only semi-permanent water body is the irrigation pond located near the southern boundary of the East Parcel, which is not a quality fish habitat.

**TABLE 2**  
**State Listed Threatened, Endangered, and Special Concern Wildlife Species**  
**Boulder County, Colorado**

<u>Scientific Name</u>	<u>Common Name</u>	<u>State of Colorado Status</u>	<u>Habitat Characteristics &amp; Range</u>
<b>Amphibians</b>			
<i>Bufo boreas boreas</i>	Boreal toad	Endangered	Restricted to areas with suitable breeding habitat in spruce-fir forests and alpine meadows. Breeds in lakes, marshes, ponds, and bogs with sunny exposures and quiet shallow water at elevations between 7,500-12,000 ft.
<i>Rana pipiens</i>	Northern leopard frog	Special Concern	Wet meadows, banks and shallows of marshes, ponds, lakes, reservoirs, slow streams and irrigation ditches; usually in permanent water with rooted aquatic vegetation at elevations between 3,500-11,000 ft. Occurs throughout Colorado excluding most of the southeast and east central portions of the state. Reduced or extirpated populations are associated with the presence of bullfrogs.
<b>Birds</b>			
<i>Athene cunicularia</i>	Burrowing owl	Threatened	Open grasslands and mountain parks, also in well-drained steppes, deserts, prairies, and agricultural lands; usually in or near prairie dog towns; sometimes in open areas near human habitation, prefers short vegetation.
<i>Buteo regalis</i>	Ferruginous hawk	Special Concern	Grasslands and semi-desert shrublands; rare in pinyon-juniper woodlands; nesting in isolated trees, rock outcrops, windmills or power poles, or on the ground; winter residents concentrate near prairie dog towns, but can occur in shrublands or agricultural areas. Winter resident on eastern plains, rare summer resident on eastern plains.
<i>Charadrius alexandrinus Nivosus</i>	Western snowy plover	Special Concern	Beaches, dry mud or salt flats, sandy shores of rivers, lakes, reservoirs, and ponds; nests on the ground where vegetation is sparse or absent; known from Alamosa, Bent, Crowley, Kiowa, Otero, Park, and Prowers

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**Boulder County, Colorado**

<u>Scientific Name</u>	<u>Common Name</u>	<u>State of Colorado Status</u>	<u>Habitat Characteristics &amp; Range</u>
<i>Charadrius melodus circumcinctus*</i>	Piping plover	Threatened	counties in southeast Colorado. Nests on sandy lakeshore beaches, around small alkaline lakes, on sandbars within river bends, or sandy wetland pastures with sparse vegetation; very rare spring and fall migrant on eastern plains west to the foothills in Arkansas and South Platte drainages.
<i>Charadrius montanus</i>	Mountain plover	Special Concern	Prairie grasslands, plains, and fields; nesting in shortgrass prairies grazed by prairie dogs, bison and cattle, and overgrazed tallgrass and fallow fields; rare to fairly common summer resident on eastern plains, with greatest numbers in Weld County; common to abundant fall migrant in Weld County, rare spring and fall migrant elsewhere on eastern plains.
<i>Falco peregrinus anatum</i>	Peregrine falcon	Special Concern	Nest on high cliffs, bluffs, and canyons; forage over adjacent coniferous and riparian forests; migrants and winter residents found near reservoirs, rivers, and marshes, but may be seen in grasslands and agricultural areas. Occasionally in urban areas with tall buildings; coniferous forests; reservoirs and wetlands during migration and winter; rare spring and fall migrant on eastern plains; very rare winter resident on eastern plains near foothills; rare summer resident in foothills and lower mountains.
<i>Grus Americana*</i>	Whooping crane	Endangered	Inhabit mudflats around reservoirs and in agricultural areas, salt flats dominated by salt grass; nest in wetlands dominated by bulrushes; rare in eastern Colorado; occur only as migrants where they can be found with flocks of sandhill cranes.
<i>Grus canadensis tabida</i>	Greater sandhill crane	Special Concern	Breeds in open grasslands, marshes, edges of lakes and ponds, river banks; roosts at night along river channels, on alluvial islands of braided rivers, or natural basin wetlands; often feeds and rests in fields and agricultural lands. Migrants occur on mudflats around reservoirs, in

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<u>Scientific Name</u>	<u>Common Name</u>	<u>State of Colorado Status</u>	<u>Habitat Characteristics &amp; Range</u>
			moist meadows, and in agricultural areas; known from Eagle, El Paso, Garfield, Grand, Jackson, Larimer, Mesa, Moffat, Rio Blanco, Rio Grande, Routt, and Saguache counties.
<i>Haliaeetus leucocephalus</i>	Bald eagle	Threatened	Most frequently seen in the vicinity of larger streams, rivers, lakes, and reservoirs with abundant fish, especially in winter; may also occur in semideserts and grasslands, especially near prairie dog towns; prefers large open-branched trees near water for hunting perches and roosting; sensitive to human disturbance; range extends throughout Colorado.
<i>Numenius Americana</i>	Long-billed curlew	Special Concern	Long-billed curlew spend summers in areas of western North America with sparse, short grasses, including short and mixed grass prairies as well as agricultural fields. They winter in interior Mexico in wetlands, mudflats and estuaries.
<i>Sterna antillarum</i> *	Least tern	Endangered	The least tern lives along large rivers and hunts in shallow wetlands and the margins of ponds and lakes, and needs bare sand and gravel for nesting. They spend the summer in North America in the Great Plains and along the Atlantic and Gulf coasts. They winter in the Caribbean and the north coast of South America.
<i>Strix occidentalis lucida</i>	Mexican spotted owl	Threatened	Lower elevation forests, mostly in deeply incised rocky canyons in southern Colorado and along the Front Range. Prefer complex forest structures or rocky canyons with uneven-aged, multi-level and old-aged thick forests. Most nests are in caves or on cliff ledges in steep-walled canyons; typically selects cool, shady sites with high canopy closure and at least a few old-growth trees, usually on moderate to steep slopes. Known from Custer, Douglas, El Paso, Fremont, Huerfano, Montezuma, Pueblo, and San Miguel Counties.

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**State Listed Threatened, Endangered, and Special Concern Wildlife Species**  
**Boulder County, Colorado**

<u>Scientific Name</u>	<u>Common Name</u>	<u>State of Colorado Status</u>	<u>Habitat Characteristics &amp; Range</u>
<b>Fish</b>			
<i>Couesius plumbeus</i>	Lake chub	Endangered	Occupy lake habitats and move into streams to spawn; most common in gravel-bottomed pools and runs of streams and along rocky lake margins. Historically known from St. Vrain and Boulder Creek watersheds; thought to be extirpated until rediscovered in St. Vrain River in 1989. Other populations have been discovered in two reservoirs in Clear Creek County and two reservoirs in the upper Cache la Poudre drainage.
<i>Etheostoma spectabile</i>	Plains orangethroat darter	Special Concern	Slow to swift riffles, sometimes runs and pools of headwater creeks and small rivers with sand, gravel, rubble, or bedrock substrates; in spring runs or quiet backwaters in some areas; most abundant in alkaline waters; avoids rivers with strong current; known from Republican river drainage in eastern Colorado.
<i>Hybognathus hankinsoni</i>	Brassy minnow	Threatened	Native to South Platte and Republican River basins; found in cooler, flowing water or pools with sand to gravel substrate and aquatic vegetation; most often found in smaller tributary streams. Existing populations in St. Vrain River, Cache la Poudre River, Lonetree Creek, Pawnee Creek, and South Platte River east of Sterling.
<i>Hybognathus placitus</i>	Plains minnow	Endangered	South Platte, Arkansas, and Republican river basins; presently nearly extirpated from Colorado; lives in river main-channels with some current, turbid water conditions and sandy bottoms. Currently in South Platte river between Ft. Morgan and Sterling.
<i>Luxilus cornutus</i>	Common shiner	Threatened	Occurs only in the upper South Platte tributary system and St. Vrain River drainage; requires streams of moderate gradient with cool clear water and

**TABLE 2**  
**State Listed Threatened, Endangered, and Special Concern Wildlife Species**  
**Boulder County, Colorado**

<u>Scientific Name</u>	<u>Common Name</u>	<u>State of Colorado Status</u>	<u>Habitat Characteristics &amp; Range</u>
			gravel substrates shaded by overhanging riparian trees and shrubs. Intolerant of silt-predominated habitat.
<i>Noturus flavus</i>	Stonecat	Special Concern	Found in fast water riffles and runs of streams, hiding under rocks, woody debris, or along sandbars during the day. Only one individual has ever been collected from the St. Vrain River in 1984; rest from Republican river basin.
<i>Oncorhynchus clarki stomias</i>	Greenback cutthroat trout	Threatened	Swift moving, cold mountain streams and mountain lakes in Arkansas and South Platte watersheds; requires cold, clear water with low levels of sediment and pollution, stable stream banks, well distributed pools, and abundant stream cover; historical range included gravelly foothills streams but it has been largely extirpated from these habitats. Existing populations within the South Platte River drainage are in protected environments within Rocky Mountain National Park and in the upper headwaters of the tributary system.
<i>Phenacobius mirabilis</i>	Suckermouth minnow	Endangered	South Platte, Arkansas, and Republican river basins; Inhabits clear shallow water riffle areas with sand and gravel and year-round flow; in South Platte drainage, only a small population is known from the Lodgepole Creek Drainage which flows into the extreme northeastern corner of Colorado.
<i>Phoxinus eos</i>	Northern redbelly dace	Endangered	Inhabits slow-moving, spring-fed, cool-water streams or ponds with aquatic vegetation and sandy bottoms. Historically occurred in the St. Vrain River, Boulder Creek, and West Plum Creek drainages; recent sampling shows only one population in West Plum Creek near Castle Rock.

**TABLE 2**  
**State Listed Threatened, Endangered, and Special Concern Wildlife Species**  
**Boulder County, Colorado**

<u>Scientific Name</u>	<u>Common Name</u>	<u>State of Colorado Status</u>	<u>Habitat Characteristics &amp; Range</u>
<b>Mammals</b>			
<i>Cynomys ludovicianus</i>	Black-tailed prairie dog	Special Concern	Form large colonies or “towns” in shortgrass or mixed grass prairie; present in most counties of the eastern plains, especially those along the front range, including lands adjacent to or within urban areas
<i>Lynx canadensis</i>	Canada lynx	Endangered	Preferred habitat is northern coniferous forests; uneven-aged stands with relatively open canopies and well developed understories that support snowshoe hare; in Colorado prefer dense spruce-fir stands in association with rock outcrops or boulders, mostly high-elevation coniferous forests above 8,000 ft.
<i>Mustela nigripes</i>	Black-footed ferret	Endangered	Historically occupied habitats ranging from shortgrass and midgrass prairie to semidesert shrublands. No known populations in Colorado; co-evolved with prairie dogs, their ranges and habitats closely overlap.
<i>Thomomys talpoides macrotis</i>	Northern pocket gopher	Special Concern	Range of habitats includes agricultural and pasture lands, semidesert shrublands, and grasslands at lower elevations ranging upwards into alpine tundra; common at elevations above 5,000 ft.
<i>Vulpes velox</i>	Swift fox	Special Concern	Shortgrass and midgrass prairies; eastern plains of Colorado; most numerous in areas with flat to gently rolling topography; can be in areas intermixed with cropland; known from Arapahoe, Baca, Bent, Cheyenne, Crowley, El Paso, Elbert, Huerfano, Kiowa, Larimer, Las Animas, Lincoln, Logan, Morgan, Otero, Prowers, Pueblo, Washington, and Weld Counties.
<i>Zapus hudsonius prebeli</i>	Preble’s meadow jumping mouse	Threatened	In and near shrub-dominated riparian areas along Colorado’s Front Range from Colorado Springs north into southeastern Wyoming; a prairie

**TABLE 2**  
**State Listed Threatened, Endangered, and Special Concern Wildlife Species**  
**Boulder County, Colorado**

<u>Scientific Name</u>	<u>Common Name</u>	<u>State of Colorado Status</u>	<u>Habitat Characteristics &amp; Range</u>
			species occupying a variety of habitats but is most common in rank, lush vegetation along watercourses or in herbaceous understories in wooded areas.
<b>Reptiles</b>			
<i>Thamnophis sirtalis</i>	Common garter snake	Special Concern	Marshes, ponds, edges of streams, basically restricted to aquatic, wetland and riparian habitats along the floodplains of streams; seldom found away from water or at isolated ponds; active in shallow water and on land adjacent to water; in Northeastern Colorado, found along South Platte River and its tributaries at elevations below 6,000 ft.
<b>Mollusks</b>			
<i>Acroloxus coloradensis</i>	Rocky Mountain capshell	Special Concern	Restricted to high mountain lakes in the Rockies; known from Boulder County, Rocky Mountain National Park, Routt and Roosevelt National Forests.
<i>Anodontoides ferussacianus</i>	Cylindrical papershell	Special Concern	Mud or sandy substrate of lakes and quiet streams; needs host fish species: largemouth bass, bluegill, black crappie, common shiner, Iowa darter, or white sucker. In Colorado, it reaches the edge of its western range and has declined to just a couple sites in the South Platte River drainage. Preferred habitat is shallow water near shore in silt.

\*Species potentially impacted by water depletions to the South Platte River.

## 4.4 Mammals

There are six mammal species listed by CPW with potential habitat in Boulder County. One of these, the black-tailed prairie dog (BTPD), is present on the West Parcel. The northern pocket gopher (*Thomomys talpoides macrotis*) occurs in a range of habitats that includes agricultural and pasture lands and is common at elevations above 5,000 feet. However, the plant community of the project site is too degraded to support the northern pocket gopher and no signs of use have been observed onsite. There is no habitat onsite for the swift fox (*Vulpes velox*), which occurs in intact shortgrass prairies. The project site does not provide appropriate habitat for the Canada lynx, as this mammal occurs in coniferous forest habitat above 8,000 feet in elevation. As noted in Section 3.1.4, a Habitat Assessment and Trapping Survey was conducted for the Preble's meadow jumping mouse. No Preble's were caught and the USFWS will likely concur, as it has in the past, that no habitat was present and development of the project area would have "no effect" on Preble's.

### 4.4.1 Black-tailed Prairie Dog

The black-tailed prairie dog colony located within the West Parcel is directly adjacent to the area identified in the 2006 City of Boulder Urban Wildlife Management Plan (UWMP) as part of the East Boulder Community Center Colony (Colony #13). The City's Management Classification/Action Plan for the private portion of Colony #13 is lacking; the portion of the colony that occurs on City of Boulder property was slated in 2006 for 'Near-term Removal'. Additionally, this colony was described in the landscape context as, "This colony is bounded by residential development, active recreation park land, a community recreation center and roadways. There is no suitable habitat, in any direction, for expansion of the colony." There are currently approximately 300 or more burrow entrances within the West Parcel.

Since the project site will be within the City of Boulder, BTPD removal can occur only after the project has been through the process outlined in the UWMP. This process can take up to 18 months to complete. Specifically, BTPD are regulated under a number of City Ordinances including Procedures for Obtaining Prairie Dog Lethal Control Permits (B.R.C. 6-1-36), Procedures Affecting the Relocation of Prairie Dogs (B.R.C. 6-1-37), and Fees and Requirements for Issuance of Prairie Dog Lethal Control Permits (B.R.C. 6-1-38). Additionally, in 2005 the City finalized the Wildlife Protection Ordinance (Chapter 1 of Title 6 of the Boulder Revised Code 6-1 B.R.C. 1981) which limits the use of lethal control on prairie dogs by requiring land owners to obtain a permit to kill prairie dogs on a site within the City. Prior to the issuance of a permit, the landowner must satisfactorily show that all non-lethal options are not feasible. The City developed a "Six-step" process which prioritizes the following for BTPD management on a case-by-case basis:

- Step 1. Minimize conflicts with the wildlife through non-removal methods.
- Step 2. Remove animals on a portion of the site where conflicts are occurring.
- Step 3. Evaluate potential for relocation.
- Step 4. Consider animal recovery programs (ferret or raptor).
- Step 5. Evaluate trapping and individual euthanasia.
- Step 6. If earlier steps are not feasible and pesticides must be used:
  - Pay into city habitat mitigation fund.
  - Post notice on property of pesticide application.

## 4.5 Reptiles

The common garter snake (*Thamnophis sirtalis*) is the only state-listed reptile with potential habitat in Boulder County. This species is potentially present on the project site.

## 4.6 Mollusks

The Rocky Mountain capshell (*Acroloxus coloradensis*) and the cylindrical papershell (*Anodontooides ferussacianus*) are the only mollusk species listed by CPW with potential habitat in

Boulder County. The Rocky Mountain capshell is found in high mountain lakes, and therefore there is no habitat for this species on the Hogan Pancost project site. The cylindrical papershell requires specific fish host species which do not occur on the project site, and it is known from only a few isolated locations within the South Platte River drainage. The site does not support the cylindrical papershell.

## 5.0 Boulder County Comprehensive Plan Critical Species & Habitats

The Boulder County Comprehensive Plan (BCCP) identifies Significant Natural Communities, Rare Plants, Riparian Corridors, and Critical Wildlife Habitats within the county (Boulder County Land Use Department, 2016). As illustrated by Figure 3, which was imported from the BCCP website, rare plant habitat (*Spiranthes diluvialis*) and wetlands/riparian areas were identified for the project site. Correspondingly, a rare plant (*Spiranthes diluvialis* and *Gaura neomexicana ssp. coloradensis*) surveys were conducted, wetlands were delineated, and riparian habitats were mapped and described. Because of the proximity of Preble's meadow jumping mouse habitat to the project site, a Preble's trapping study was also conducted.

## 6.0 Conclusion

The Hogan Pancost property does not support any populations of federally listed threatened, endangered, or candidate species or their habitats. Formal investigations have been conducted for the Preble's meadow jumping mouse (Wildlife Specialties, 2016), the Ute ladies' tresses orchid and the Colorado butterfly plant (Western Ecological Resource, 2016). These species were not present on the project site and it was determined that no suitable habitat for these species occurs on the site. Thus, proposed development of the Hogan Pancost property will not impact any of the federally listed threatened and endangered species in Table 1 or their habitats.

Of the 32 wildlife species listed by the CPW as State threatened, endangered, or special concern, one species, the black-tailed prairie dog, is known to occur on the Hogan Pancost project site. In addition, there are four species that could potentially occur onsite, although their presence has not been documented. These include the burrowing owl, ferruginous hawk, bald eagle, and common garter snake. Although ferruginous hawks and bald eagles may forage on the project site, there are no raptor nests onsite or in the immediate vicinity. Furthermore, no burrowing owls were observed during the 2016 surveys.

As illustrated by Figure 3, there are no Significant Natural Communities, Rare Plants, Riparian Corridors, or Critical Wildlife Habitats identified in the Boulder County Comprehensive Plan that are located on the Hogan Pancost project site.

**Figure 3-1  
Rare Plant  
Areas and  
Significant  
Natural  
Communities**



**Significant Natural Communities**



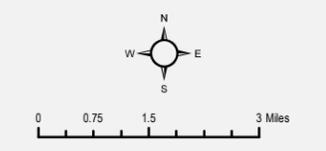
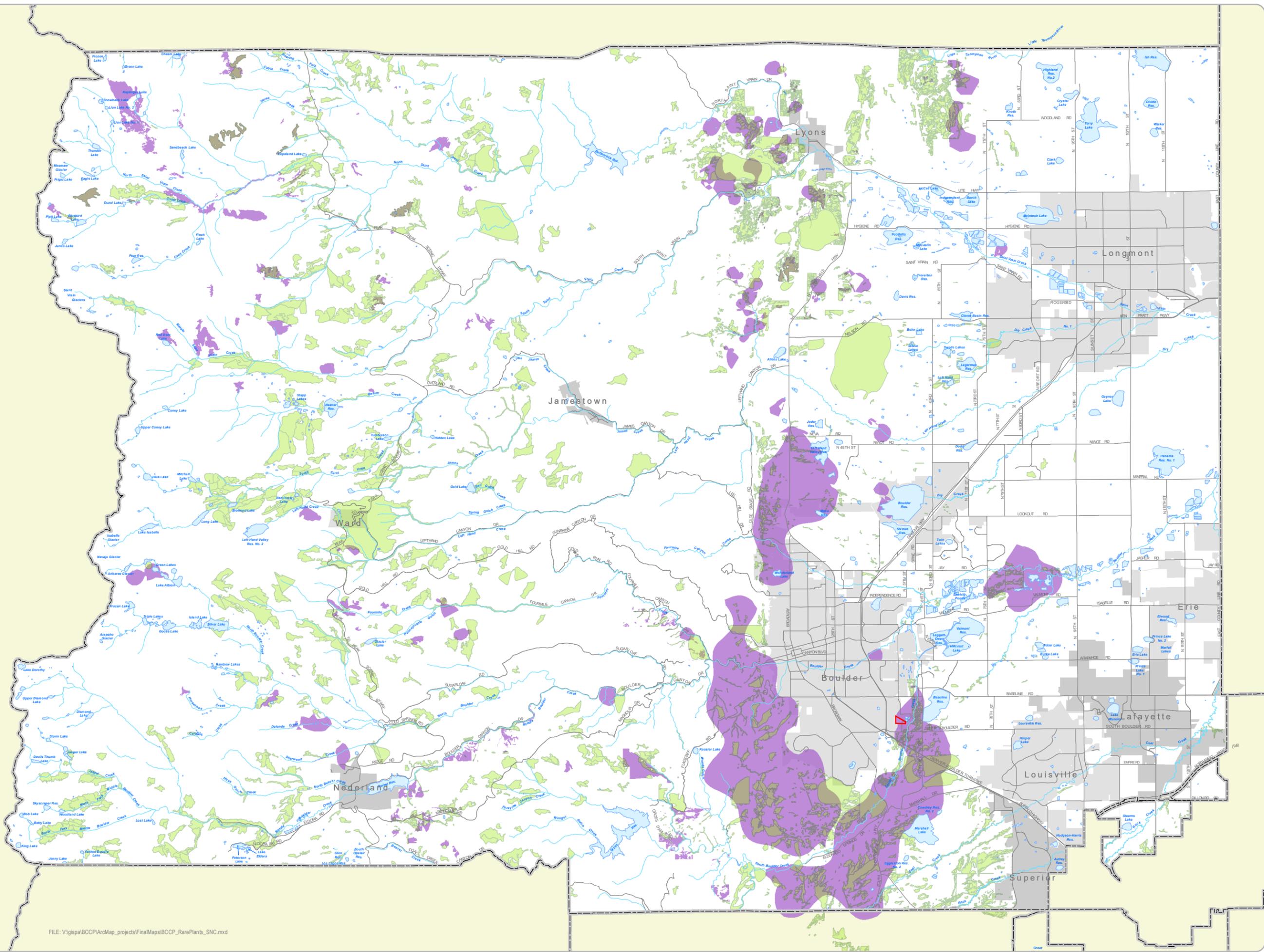
An area where a combination of plant species (a plant association) that is critically imperiled or vulnerable to extirpation is present.

**Rare Plant Areas**



An area known to have or have a high likelihood of having occurrences of Plant Species of Special Concern.

 Project Site



### Figure 3-2 Wetlands and Riparian Areas



#### Riparian Areas

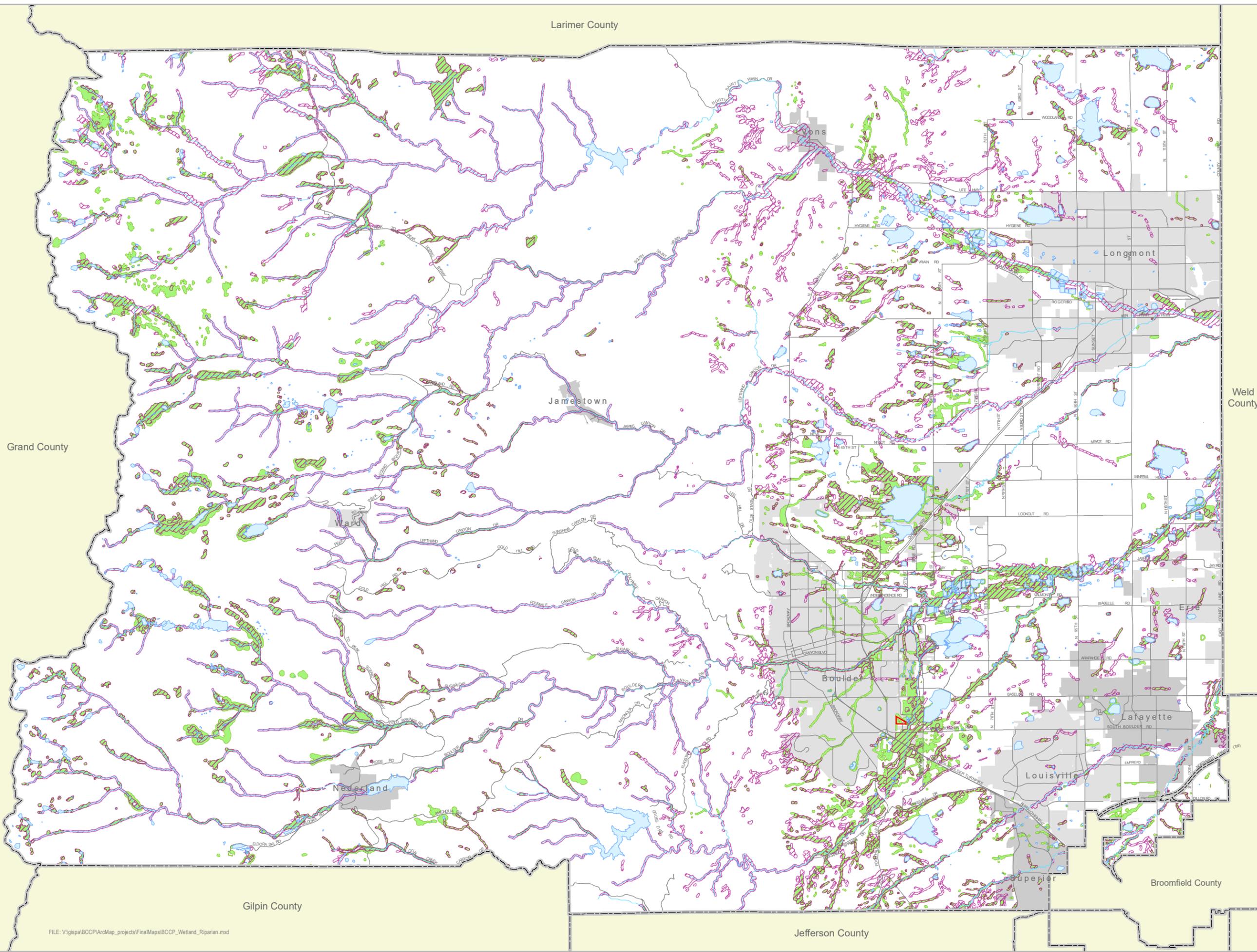


An area recognized by the presence of linear bands of trees, shrubs, and herbaceous vegetation along a waterway where plant communities and soil moisture differ from surrounding upland vegetation and soils

#### Wetlands



Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water with one or more of the following attributes: (1) at least periodically, the land supports predominantly hydrophytes (wetland plants); (2) the substrate is predominantly un-drained hydric soil; and/or (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (USFWS 1993).



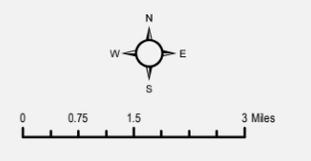
Weld County

Grand County

Gilpin County

Jefferson County

Broomfield County



**Figure 3-3  
Critical  
Wildlife Habitat  
and  
Migration  
Corridors**

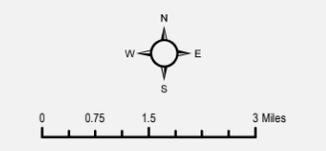
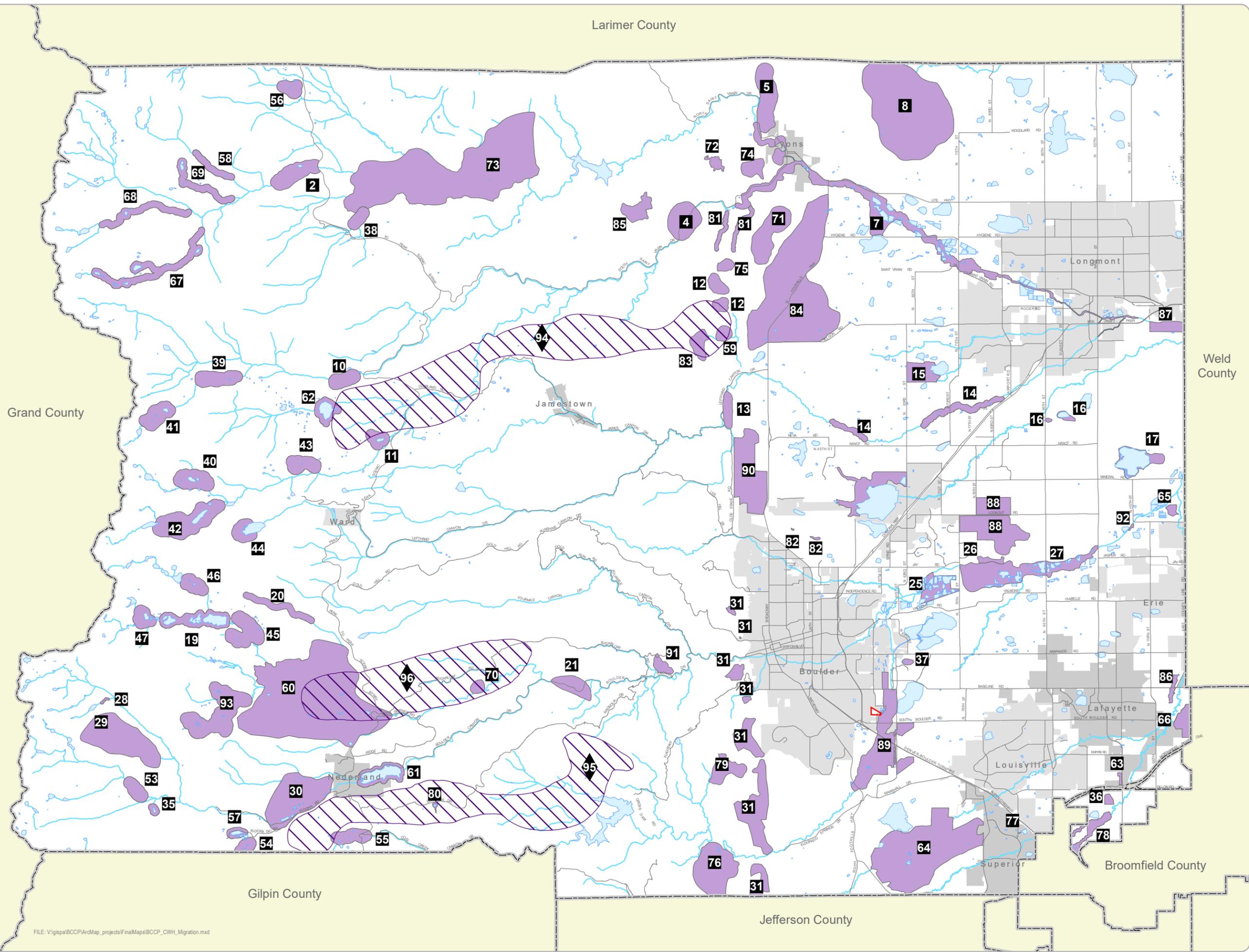


**Critical Wildlife Habitats**

**1**  
An area of unique habitat which has a crucial role in sustaining populations of native wildlife and in perpetuating and encouraging a diversity of native species in the county. The area may be significantly productive habitat or particularly vital to the life requirements of species that are critically imperiled or vulnerable to extirpation.

**Wildlife Migration Corridors**

**1**  
A specific, delineated area of known elk migration movement for a major elk herd in Boulder County.



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# Figure 3-4 Habitat Conservation Areas for Prebles Meadow Jumping Mouse



**Habitat Conservation Areas Descriptions**  
Habitat Conservation Areas are adapted from the "Possible Conservation Zones" of the PMJM Conservation Handbook. The designations guide conservation of PMJM habitat with the overarching goal of aiding in the recovery of this Threatened species.

**Zone 1 Mouse Management Area (MMA)**

 Areas in which PMJM is known to occur, including adjacent habitat patches that are likely to be occupied. Management should emphasize maintaining higher quality riparian habitat and higher numbers of mice. Areas of poor quality are priorities for restoration with high expectations for success.

**Zone 2 Possible Linkages**

 Linkages are designated for populations that once occurred as a single unit, but are now fragmented. Linkages provide adequate structure for a few mice to "make it to the other side", facilitating dispersal, population maintenance, and genetic exchange.

**Zone 3 Suitable Contiguous Habitat**

 Areas of suitable habitat that are contiguous to a known population and are not known to be occupied by PMJM (i.e. PMJM either have not been captured or no trapping has occurred).

**Zone 4 Potential Restoration, Contiguous**

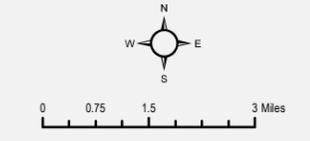
 Areas not known to be occupied but contiguous with known populations where restoration of unsuitable or degraded habitat could result in a significant increase in a PMJM population.

**Zone 5 Suitable, Noncontiguous Habitat**

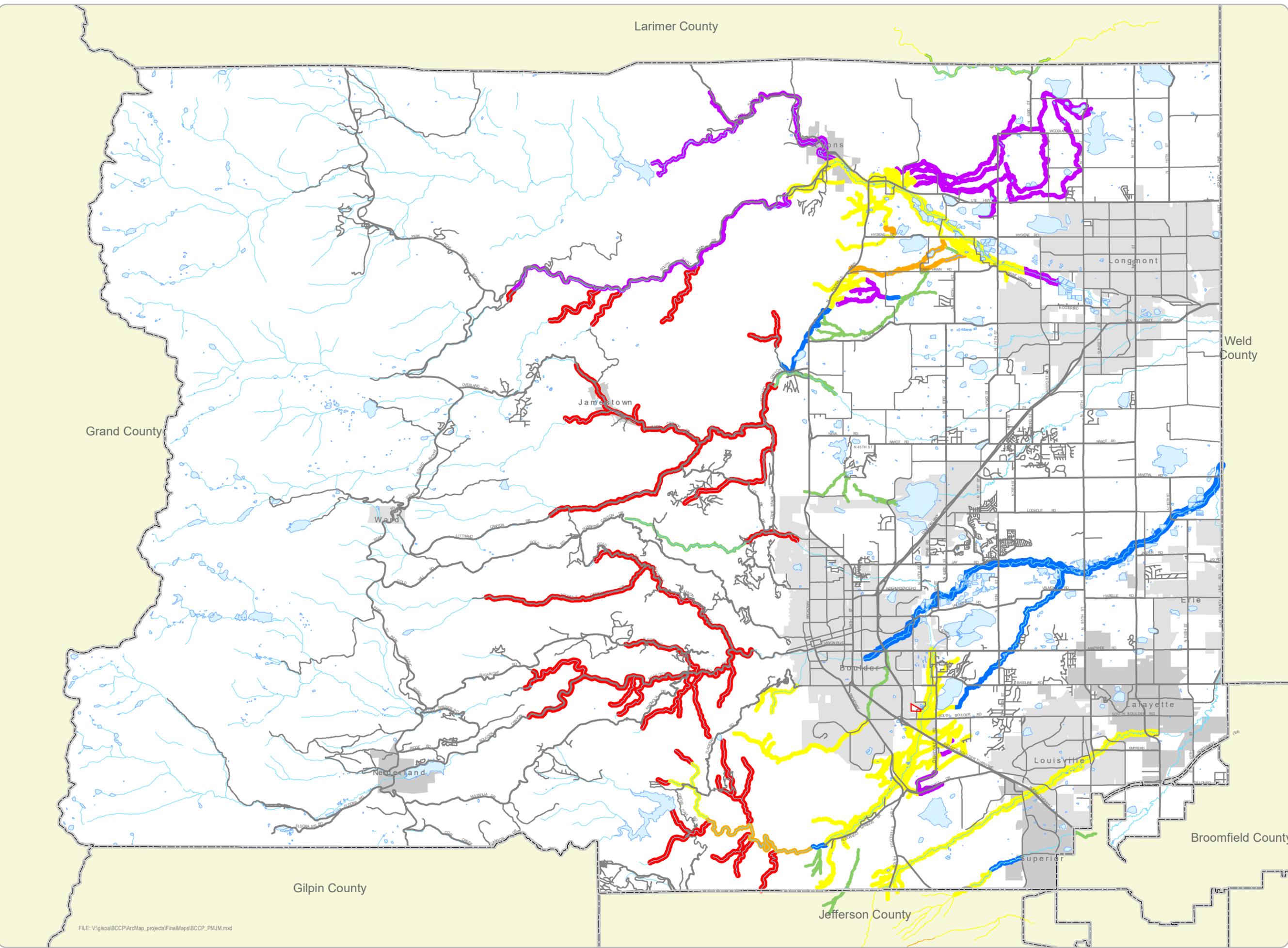
 Areas of suitable habitat that are NOT contiguous to a known population and are not known to be occupied by PMJM.

**Foothills Perennial Stream Habitat**

 Areas of suitable PMJM habitat along foothills perennial streams up to 7,600 ft. in elevation not covered under one of the other designations. PMJM are known to occupy riparian habitat up to this elevation (USFWS 2004).



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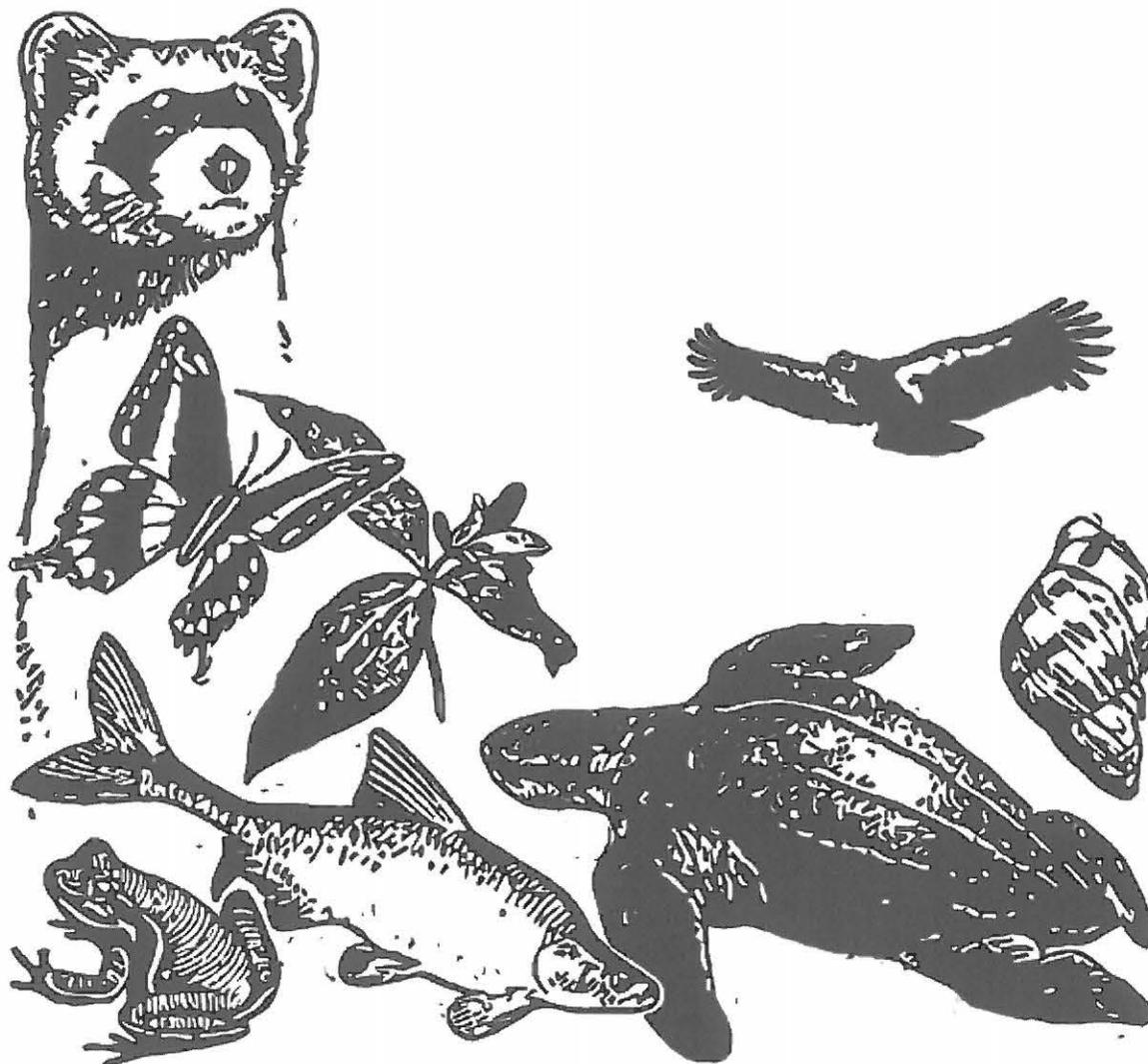
**Appendix A. U.S. Fish & Wildlife Service IPaC Trust Resource Report**

# hogan pancost

## *IPaC Trust Resources Report*

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This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



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# IPaC Trust Resources Report



NAME

hogan pancost

LOCATION

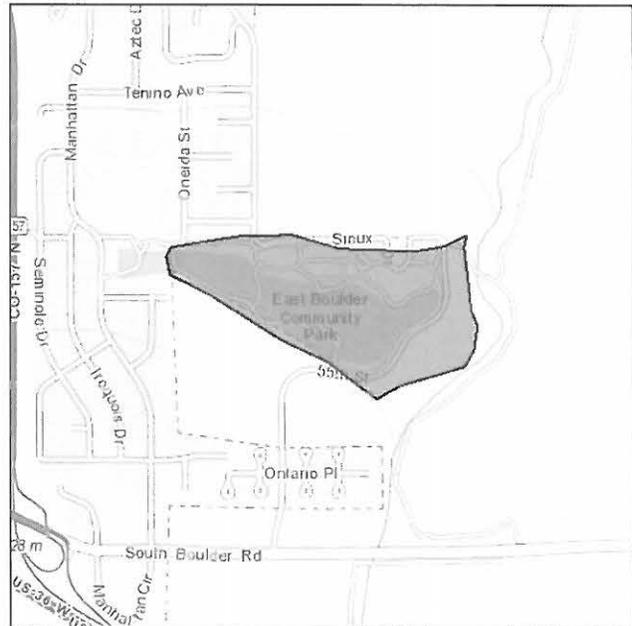
Boulder County, Colorado

DESCRIPTION

boulder co

IPAC LINK

<https://ecos.fws.gov/ipac/project/6PRP2-QQWFR-ARXC7-JTA5N-7OAE3Q>



## U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

**Colorado Ecological Services Field Office**

Denver Federal Center

P.o. Box 25486

Denver, CO 80225-486

(303) 236-4773

## Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

**This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.**

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

**A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.**

The list of species below are those that may occur or could potentially be affected by activities in this location:

## Birds

### **Least Tern** *Sterna antillarum* Endangered

THIS SPECIES ONLY NEEDS TO BE CONSIDERED IF THE FOLLOWING CONDITION APPLIES  
Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=B07N](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B07N)

### **Mexican Spotted Owl** *Strix occidentalis lucida* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=B074](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B074)

### **Piping Plover** *Charadrius melodus* Threatened

THIS SPECIES ONLY NEEDS TO BE CONSIDERED IF THE FOLLOWING CONDITION APPLIES  
Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=B079](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B079)

### **Whooping Crane** *Grus americana* Endangered

THIS SPECIES ONLY NEEDS TO BE CONSIDERED IF THE FOLLOWING CONDITION APPLIES  
Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=B003](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B003)

## Fishes

### **Greenback Cutthroat Trout** *Oncorhynchus clarki stomias* Threatened

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=E00F](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=E00F)

### **Pallid Sturgeon** *Scaphirhynchus albus* Endangered

THIS SPECIES ONLY NEEDS TO BE CONSIDERED IF THE FOLLOWING CONDITION APPLIES  
Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=E06X](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=E06X)

## Flowering Plants

**Colorado Butterfly Plant** *Gaura neomexicana* var. *coloradensis* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=Q0VV](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q0VV)

**Ute Ladies'-tresses** *Spiranthes diluvialis* Threatened

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=Q2WA](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2WA)

**Western Prairie Fringed Orchid** *Platanthera praeclara* Threatened

THIS SPECIES ONLY NEEDS TO BE CONSIDERED IF THE FOLLOWING CONDITION APPLIES

Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=Q2YD](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2YD)

## Mammals

**Canada Lynx** *Lynx canadensis* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=A073](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A073)

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

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=A0C2](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A0C2)

## Critical Habitats

This location overlaps all or part of the critical habitat for the following species:

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

Final designated critical habitat

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=A0C2#crithab](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A0C2#crithab)

## Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.<sup>[1]</sup> There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern  
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data  
<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The following species of migratory birds could potentially be affected by activities in this location:

<b>American Bittern</b> <i>Botaurus lentiginosus</i>	Bird of conservation concern
Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F3">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F3</a>	
<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>	Bird of conservation concern
Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008</a>	
<b>Black Rosy-finch</b> <i>Leucosticte atrata</i>	Bird of conservation concern
Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0J4">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0J4</a>	
<b>Black Swift</b> <i>Cypseloides niger</i>	Bird of conservation concern
Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FW">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FW</a>	

<b>Brewer's Sparrow</b> <i>Spizella breweri</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HA">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HA</a>	Bird of conservation concern
<b>Burrowing Owl</b> <i>Athene cunicularia</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC</a>	Bird of conservation concern
<b>Cassin's Finch</b> <i>Carpodacus cassinii</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J6">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J6</a>	Bird of conservation concern
<b>Dickcissel</b> <i>Spiza americana</i> Season: Breeding	Bird of conservation concern
<b>Ferruginous Hawk</b> <i>Buteo regalis</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06X">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06X</a>	Bird of conservation concern
<b>Flammulated Owl</b> <i>Otus flammeolus</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0DK">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0DK</a>	Bird of conservation concern
<b>Golden Eagle</b> <i>Aquila chrysaetos</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0DV">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0DV</a>	Bird of conservation concern
<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ</a>	Bird of conservation concern
<b>Loggerhead Shrike</b> <i>Lanius ludovicianus</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY</a>	Bird of conservation concern
<b>Long-billed Curlew</b> <i>Numenius americanus</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S</a>	Bird of conservation concern
<b>Mountain Plover</b> <i>Charadrius montanus</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B078">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B078</a>	Bird of conservation concern
<b>Peregrine Falcon</b> <i>Falco peregrinus</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU</a>	Bird of conservation concern
<b>Prairie Falcon</b> <i>Falco mexicanus</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0ER">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0ER</a>	Bird of conservation concern

<b>Sage Thrasher</b> <i>Oreoscoptes montanus</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0ID">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0ID</a>	Bird of conservation concern
<b>Short-eared Owl</b> <i>Asio flammeus</i> Season: Wintering <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD</a>	Bird of conservation concern
<b>Swainson's Hawk</b> <i>Buteo swainsoni</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B070">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B070</a>	Bird of conservation concern
<b>Virginia's Warbler</b> <i>Vermivora virginiae</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IL">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IL</a>	Bird of conservation concern
<b>Western Grebe</b> <i>aechmophorus occidentalis</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA</a>	Bird of conservation concern
<b>Williamson's Sapsucker</b> <i>Sphyrapicus thyroideus</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FX">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FX</a>	Bird of conservation concern
<b>Willow Flycatcher</b> <i>Empidonax traillii</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F6">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F6</a>	Bird of conservation concern

## Wildlife refuges and fish hatcheries

**There are no refuges or fish hatcheries in this location**

# Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

## DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

This location overlaps all or part of the following wetlands:

## Freshwater Emergent Wetland

### PEMC

A full description for each wetland code can be found at the National Wetlands Inventory website: <http://107.20.228.18/decoders/wetlands.aspx>

## Appendix B. Preble's Trapping Survey Results

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September 1, 2016

Mr. Drue DeBerry  
US Fish and Wildlife Service  
Ecological Services, Colorado Field Office  
P.O. Box 25486, DFC (65412)  
Denver, CO 80225-0486

Subject: Preble's Meadow Jumping Mouse Presence/Absence Trapping Survey, Hogan Pancost, Boulder County Colorado

Dear Drue:

This letter represents the results of a Preble's meadow jumping mouse (*Zapus hudsonius preblei* [PMJM]) presence/absence trapping survey conducted at the Hogan Pancost property, Boulder County, Colorado. Based on the results of the 2016 trapping survey and previous habitat assessments, we request concurrence from your office that the project area does not provide suitable PMJM habitat and development of the project area would have “no effect” on PMJM.

The 22.17 acre Hogan Pancost property is located in Boulder County, Colorado, southwest of the East Boulder Community Park. 55<sup>th</sup> Street bisects the property to create a 2.73 acre East Parcel and a 19.44 acre West Parcel. Specifically, the property is located in parts of Sections 3 and 4 of Township 1 North and Range 70 West in Boulder County (Figure 1).

Both the West and East parcels are undeveloped except for several small sheds on the West Parcel associated with an agricultural land use. The agricultural land use of the project site extends back to the settlement era in the late 1800's (Hogan, 2008). Recent agricultural use includes livestock grazing. The West Parcel is currently being grazed by horses. Historically, the Hogan Pancost property was extensively flood irrigated beginning with settlement in the late 1800's (Hogan, 2008). Flood irrigation of the West Parcel was terminated approximately six years ago, and the East Parcel is typically flood irrigated twice per year from the property to the south. The West Parcel has a population of black-tailed prairie dogs (*Cynomys ludovicianus*). The prairie dogs ground disturbances have increased the abundance of noxious and undesirable weeds while decreasing suitable PMJM upland habitat.

Several irrigation ditches and laterals are present on the project site. The Dry Creek Ditch #2 (Ditch) is located along the western boundary of the West Parcel, and the CD Bodam Lateral (Lateral) is located along the southern boundary of the West Parcel. The Super-phosticle Lateral flows northwest across the East Parcel and across the easternmost portion of the West Parcel, then continues northwest just outside the northern boundary of the West Parcel. There are no streams on the project site; however South Boulder Creek is located east of the East Parcel. A small irrigation water storage pond occurs on the property to the south and extends into the East Parcel near the Super-phosticle Lateral.

The vegetation of the East and West Parcels is characterized by 5.05 acres of a degraded agricultural seeding, 14.69 acres of Colorado noxious and other weeds, 0.324 acres of plains cottonwood trees (*Populus deltoides*) on the east end of the East Parcel, 1.59 acres of man-induced jurisdictional wetlands, and a 0.02 acre pond. The upland pasture is best developed in swales just north of the Lateral where they were historically flood irrigated. Please note, this Lateral is lined and the flood irrigation has been terminated. The swale areas are characterized

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by agricultural and native wetland and facultative plants such as meadow fescue (*Festuca pratensis*), redtop (*Agrostis gigantea*), Baltic rush (*Juncus arcticus* subsp. *ater*) and numerous upland species, including timothy (*Phleum pratense*), Kentucky bluegrass (*Poa pratensis*), chicory (*Cichorium intybus*), narrow-leaf birds-foot trefoil (*Lotus tenuis*), curly dock (*Rumex crispus*), and red clover (*Trifolium pratense*).

Weedy areas occur in the slightly higher elevations of the project site where prairie dogs have created disturbed habitats and in mesic areas on the East Parcel. These areas have a vegetation cover composed of a diversity of Colorado state listed noxious weeds and other introduced plants. The most abundant weeds in the West Parcel include Scotch thistle (*Onopordum acanthium*), diffuse knapweed (*Acosta diffusa*), Canada thistle (*Cirsium arvense*), mullein (*Verbascum thapsus*), chicory, and field bindweed (*Convolvulus arvensis*). The East Parcel has large stands of teasel (*Dipsacus fullonum*) intermixed with the wetland plants, as well as stands of Canada thistle and a few Russian olive (*Elaeagnus angustifolia*) trees.

Wetlands on the project site are dominated by graminoids and perennial forbs, and in places woody shrubs. Major graminoids include redtop, meadow fescue, American mannagrass (*Glyceria grandis*), Baltic rush, Nebraska sedge (*Carex nebrascensis*), clustered field sedge (*Carex praegracilis*), and prairie cordgrass (*Spartina pectinata*). Common forbs present include Macoun's buttercup (*Ranunculus macounii*), water smartweed (*Persicaria amphibia*), largeleaf avens (*Geum macrophyllum*), field mint (*Menta arvensis*), and white panicle aster (*Aster lanceolatus* ssp. *hesperius*). Many of the wetlands, especially on the drier edge, have introduced weeds including Canada thistle, teasel, prickly lettuce (*Lactuca serriola*), and others. Sandbar willows (*Salix exigua*) occur along the irrigation ditches. Less abundant woody plants include chokecherry (*Prunus virginiana* var. *melanocarpa*), Russian olive, plains cottonwood (*Populus deltoides*), and crack willow (*Salix fragilis*).

Finally, a small stand of plains cottonwood trees occur in the eastern portion of project area. The understory is comprised of upland and facultative plants such as smooth brome (*Bromus inermis*), meadow fescue, Canada goldenrod (*Solidago canadensis*), and goldenbanner (*Thermopsis divaricarpa*).

Designated Critical Habitat/Occupied Habitat. South Boulder Creek is identified by USFWS as Designated Critical Habitat. Because PMJM use uplands away from stream corridors, all uplands within 300 feet of the center of the stream have been included as a Critical Habitat buffer. The extreme south-east corner of the East Parcel is within approximately 30 feet of the upland buffer (Figure 2). All upland areas within the mapped buffer may not be suitable habitat (e.g. prairie dog colonies, disturbed areas, etc.) capable of adding important PMJM life history components.

In 2014 (most recent trapping conducted), the City of Boulder captured a PMJM approximately 246 feet east of the eastern edge of the East Parcel on the west bank of South Boulder Creek (Swanson 2016). Several individuals were captured along South Boulder Creek and all captures occurred within approximately 50 feet of the creek (most between 20-30 feet from the creek).

Consultation History. Several previous habitat assessments and USFWS concurrence have been completed for the project site (Appendix A). These assessments were conducted in 2003, 2007 and 2008, and each assessment was concurred with by the USFWS that the project area was not capable of supporting Preble's and any development of the project area would not harm Preble's.

2016 Trapping Survey Results. The survey was conducted under protocol set forth by the USFWS (USFWS 2004) using Sherman Live Traps baited with Purina Animal Chow™ (a combination of rolled oats, cracked corn and molasses). A total of 180 Sherman Live Traps were placed the evening of August 21, 2016 within the best habitat within the project area and the only area that could function as a movement corridor. A total of 100 traps were placed along the CD Bodam Lateral on the south side of the West Parcel and 80 traps on the south side of the East Parcel. Traps were set in two singular rows containing 50 traps each with each row 10 meters apart and traps spaced approximately 5 meters (16.4 feet) apart in the West Parcel and two parallel transects of 40 traps in

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the East Parcel (Figure 3). Traps remained in place and were open and available for capture on the nights of the 21<sup>st</sup> through the 24<sup>th</sup>. A total of 720 trap nights were completed. Trapping did not continue beyond the night of the 24<sup>th</sup> because of wet and cold conditions that were not favorable to trapping because of the risk of hypothermia for trapped animals. Appendix B contains the 2004 Survey Field Data Compilation Form. Photos 2 and 3 are representative of the habitat trapped on the West Parcel; Photos 4 and 5 are representative of the habitat trapped on the East Parcel.

The survey resulted in the total capture of 231 individuals representing four species. There were no captures of PMJM. The Deer Mouse (*Peromyscus maniculatus*) was the most common species trapped (115 captures; 49.7% of all captures) followed by the Meadow Vole (*Microtus pennsylvanicus*) with 95 captures (41.1 % of all captures). Western Harvest Mice (*Reithrodontomys megalotis*) and the House Mouse (*Mus musculus*) were the other two species captured at 4.7 and 4.3 percent, respectively.

Cover height and amount can be important in small mammal population regulation. Oftedahl (Oftedahl (1976) determined cover amount and height to be important in small mammal population regulation and reported that overgrazed areas with short vegetation and bare ground favored the Deer Mouse and areas that were not overgrazed had a greater occurrence of voles (*Microtus* spp. – Oftedahl 1976). The majority of the uplands associated with the project area have very short to no vegetation and the vegetation present is dominated by non-native invasive species (Photo 1). These areas likely support a small number of the Deer Mouse and likely are not capable of supporting other species including PMJM.

Trap availability was high; of the 489 available trap nights (231 not available because of captures) 39 traps (8 %) were recorded as ‘closed/empty’. These traps were often found away from the original trap location with the batting removed, likely the result of Raccoons (*Procyon lotor*) tampering with the traps. Ninety two percent (450 traps) of all traps were recorded as ‘open/empty’ and were available for small mammals to enter into.

Qualification of Surveyor. Mr. Jerry Powell has conducted small mammal studies since the early 1990s and PMJM habitat assessments and surveys since the late 1990s. His qualifications are on record with the USFWS.

In conclusion, based on the previous consultations conducted for the Hogan Pancost project area, the highly disturbed nature of the project area, and the lack of captures of PMJM during the 2016 trapping survey, we request concurrence that development of the Hogan Pancost project area would have “no effect” on PMJM and that the project area is incapable of supporting PMJM.

Sincerely,

Handwritten signature of Jerry M. Powell

Jerry Powell, M.S.  
Certified Wildlife Biologist®  
Certified Ecologist

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## References

Oftedahl, L. O. 1976. Small mammal habitat modification in Northeastern Colorado. Technical Report No. 301. Grassland Biome, U.S. International Biological Program.

Swanson, H. 2016. Personal communication between Heather Swanson, Wildlife Ecologist City of Boulder Open Space and Mountain Parks, and Jerry Powell, Wildlife Biologist Wildlife Specialties LLC.

United States Fish and Wildlife Service (USFWS). 2004. Letter To Whom It May Concern regarding modified recommendations and guidelines for surveys to determine the presence or absence of the Preble's meadow jumping mouse, (*Zapus hudsonius preblei* - Preble's), in Colorado and southeastern Wyoming. Reference: ES/CO: T&E/PMJM/Other MS 65412 Lkwd

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## Photographs



Photo 1. Looking southwest across the West Parcel.

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Photo 2. Looking at the western end of the West Parcel survey transect.

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Photo 3. Looking west toward the end of the West Parcel transect.

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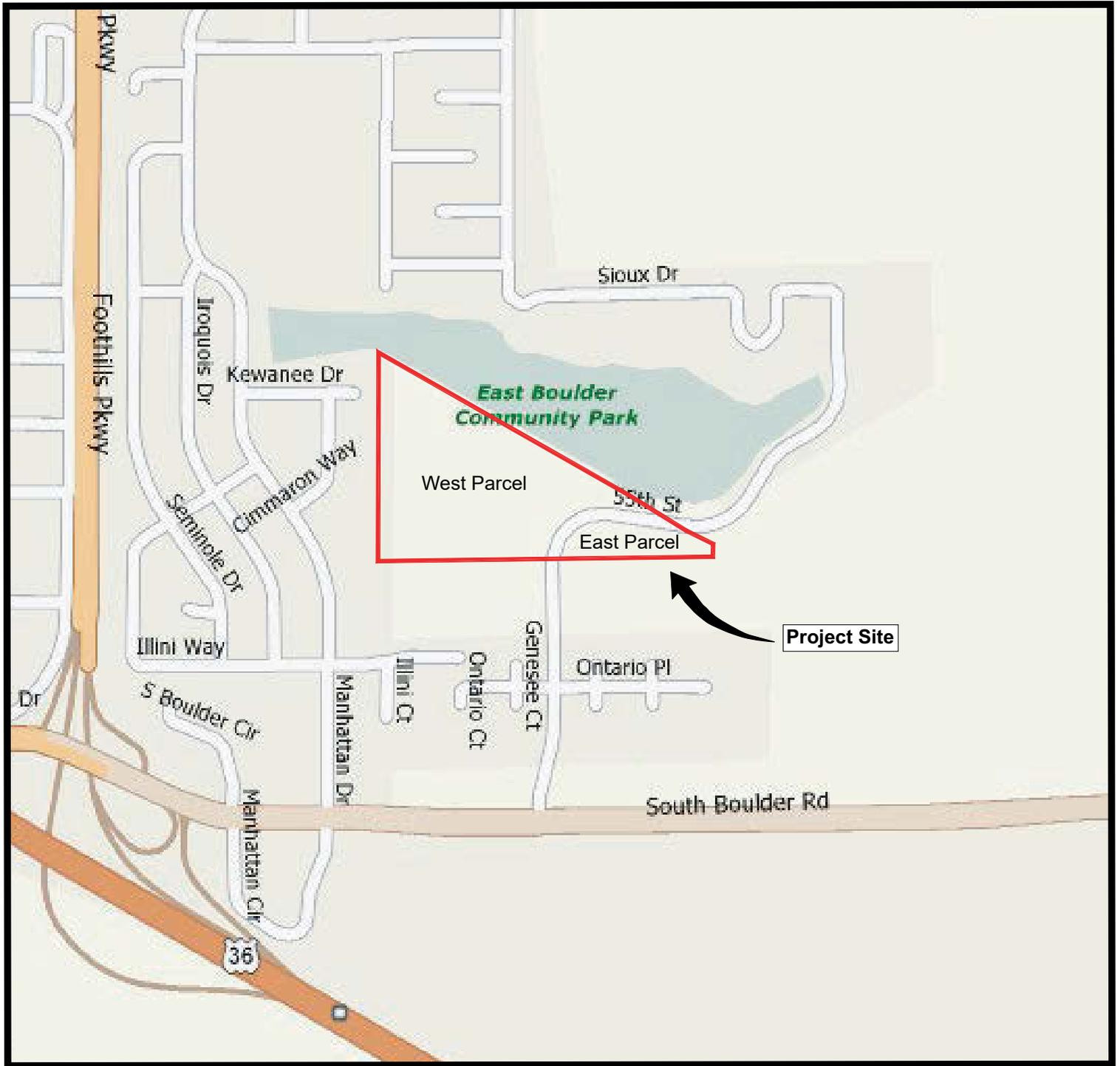
Photo 4. Looking east toward the end of the East Parcel transect.

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Photo 5. Looking west down the East Parcel transect.



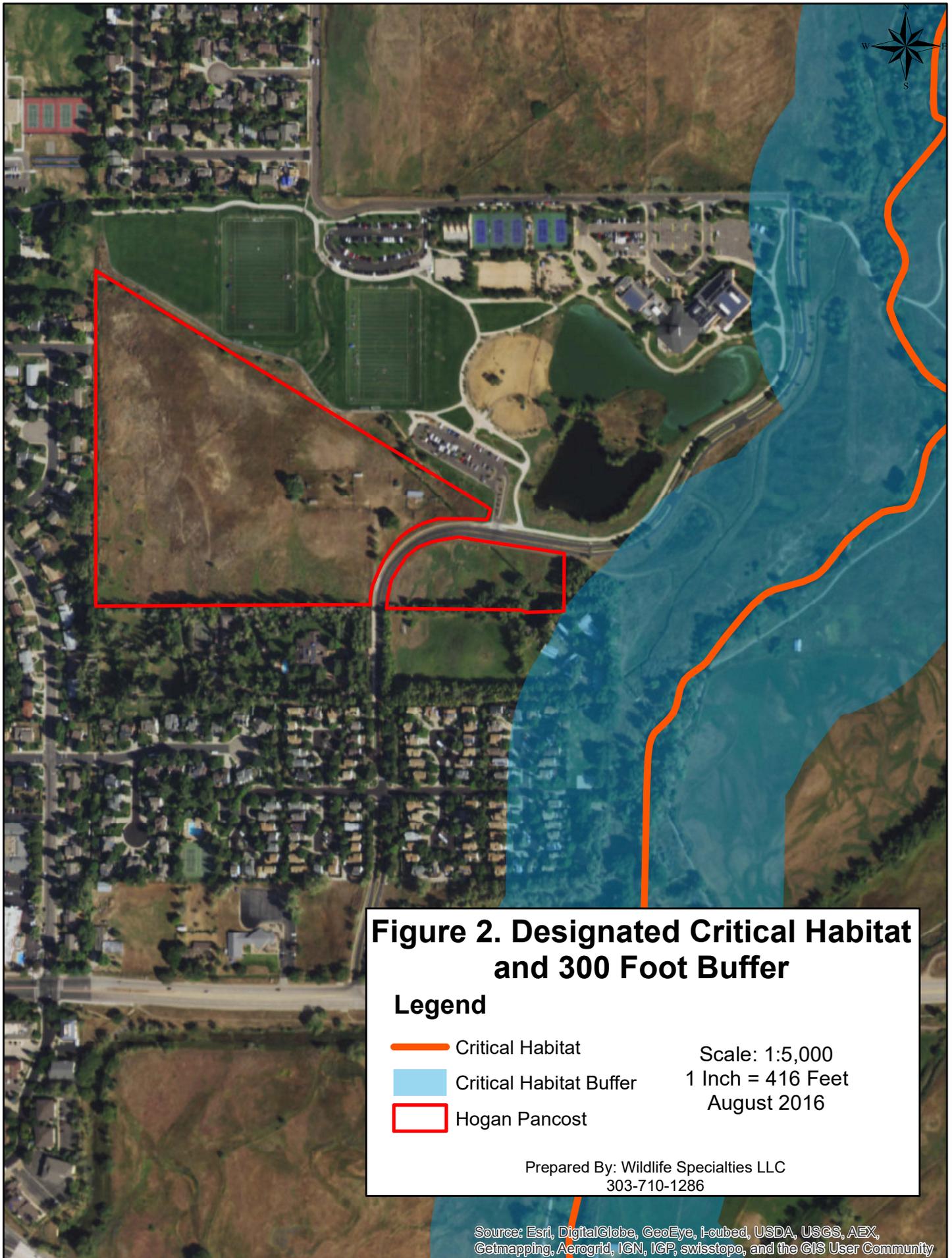
BASE: Map Data Mapquest 2008 NAVETQ or TeleAtlas

**FIGURE 1. Vicinity Map  
Hogan Pancost Property**



Scale 1" = 600'





**Figure 2. Designated Critical Habitat and 300 Foot Buffer**

**Legend**

- Critical Habitat
- Critical Habitat Buffer
- Hogan Pancost

Scale: 1:5,000  
 1 Inch = 416 Feet  
 August 2016

Prepared By: Wildlife Specialties LLC  
 303-710-1286

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Figure 3. 2016 Survey Transect Locations**

**Legend**

- Transect
- Hogan Pancost

Scale: 1:3,000  
 1 Inch = 250 Feet  
 August 2016

Prepared By: Wildlife Specialties LLC  
 303-710-1286

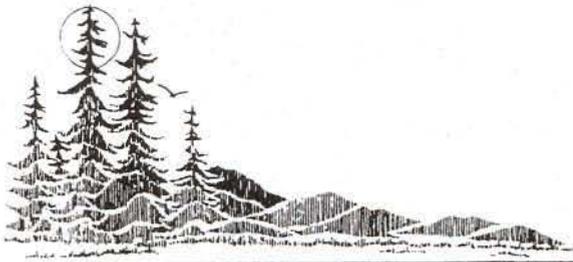
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

# Wildlife Specialties LLC

*“Practical, science-based applications for wildlife and ecological studies benefiting all clients”*



## Appendix A Previous PMJM Habitat Assessments - Hogan Pancost



Mr. Charles Gee  
MACKENZIE HOUSE  
147 Walnut St..  
Suite 102  
Boulder, CO. 80302

July 24, 2008

Dear Mr. Gee;

I completed a site visit to the Hogan-Pancost property on July 14, 2008. The objective, following your request, was to evaluate current habitat conditions relevant to the federally threatened Preble's Jumping Mouse.

My site visit was directed primarily at evaluating your recent maintenance activities along the irrigation ditch at the southwest edge of the property. The disturbances to the vegetation adjacent to the ditch are minor and in no way represent a potential impact to the jumping mouse or to other wildlife species. Similarly, as no changes in the hydrology will occur due to this ditch maintenance, there will be no downstream effects or off-site impacts.

I hope the information provided here is satisfactory for your purposes. If I can be of further assistance, please feel free to call.

Respectfully,

Robert. E. Stoecker, PhD  
Consulting ecologist



Mr. Peter Plage  
U.S. Fish and Wildlife Service  
Ecological Services  
Colorado Field Office  
P.O. Box 25486, DFC (MS 65412)  
Denver, CO. 80225-0486

August 7, 2007

**RE: Update of request for exclusion of survey trapping for the federally threatened Preble's jumping mouse**

Dear Mr. Plage:

A request for excluding the property described below from a trapping survey for the Preble's jumping mouse was submitted to your office on August 8, 2003. On August 25, 2003 your office granted this request. I am enclosing pertinent materials from these correspondences with this report.

My client would like at this time to update the 2003 report and to again request an exclusion of a trapping survey. The project area is the **Hogan/Pancost Property**, located in the city of Boulder, approximately 1/4 mile north of South Boulder Road on 55<sup>th</sup> Street (Section 4, T1S R70W, UTM 4,426,400N 480,900E). After your review of these materials, would you please inform the client regarding your acceptance or rejection of my habitat evaluation? The client can be reached at the following address?

Mr. Tom Finley  
MACKENZIE HOUSE  
7887 E. Belleview Ave.  
Suite 800  
Englewood, CO. 80111  
(720) 240-4580

In my 2003 report I presented the following habitat description:

The Hogan/Pancost Property consists of grassy meadows located to either side of 55th Street (Figures 1 and 2). A very small irrigation ditch parallels 55th Street at this location, and South Boulder Creek is approximately 375 feet east of the property boundary. The East Boulder Recreation Center is located immediately northeast of the property and two ponds belonging to this facility are just outside the property boundary. There is no riparian habitat on the Hogan/Pancost property or stands of willow or other mesic shrub. In my opinion, this site is unlikely to support a population of Preble's Jumping mice or to function as a movement corridor and therefore should be excluded from further Preble's Jumping mouse considerations. In my opinion, this site is unlikely to support a population of Preble's Jumping mice or to function as a movement corridor and therefore should be excluded from further Preble's Jumping mouse considerations.

I again visited this site, on August 6, 2007, to update my 2003 habitat evaluation. I am including two recent photographs, and re-submitting the 2003 photographs for your review. In my opinion there has been no significant habitat changes and therefore I would like to request that the property be again excluded from a Preble's jumping mouse live-trapping survey.

Thank you for your consideration of this request. If you require additional information regarding this project, please feel free to call.

Respectfully,

A handwritten signature in black ink that reads "Bob Stoecker". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Robert E. Stoecker, PhD  
Consulting Ecologist

cc. Tom Finley

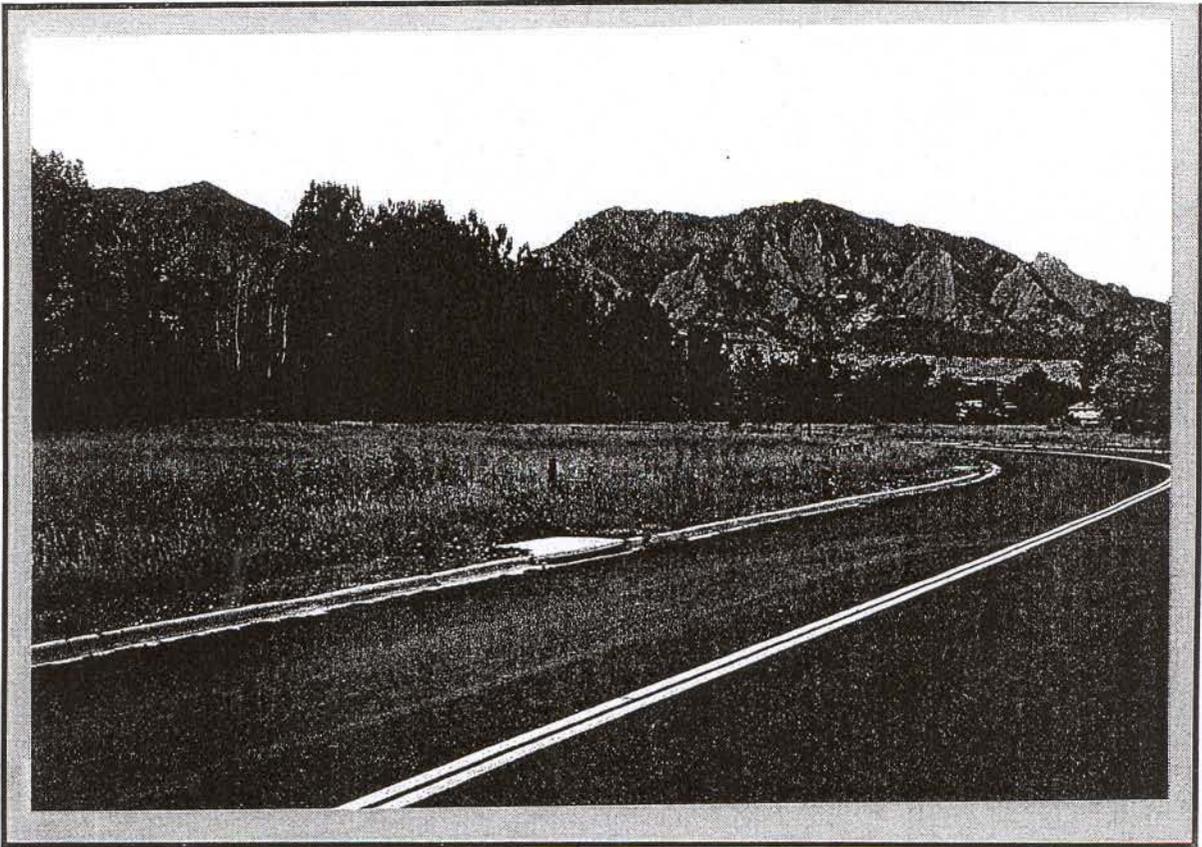


Figure 1.

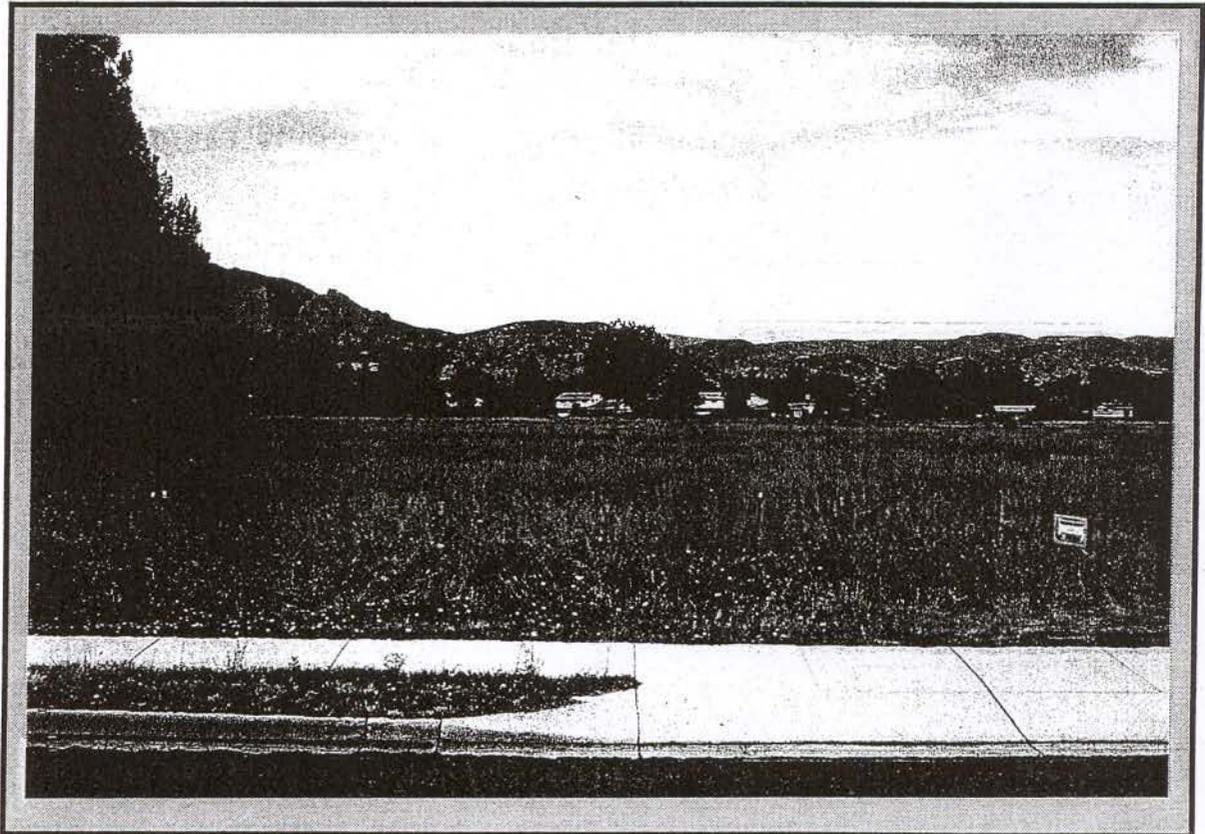


Figure 2.

**Photographs taken in 2003**

A-4

B-17

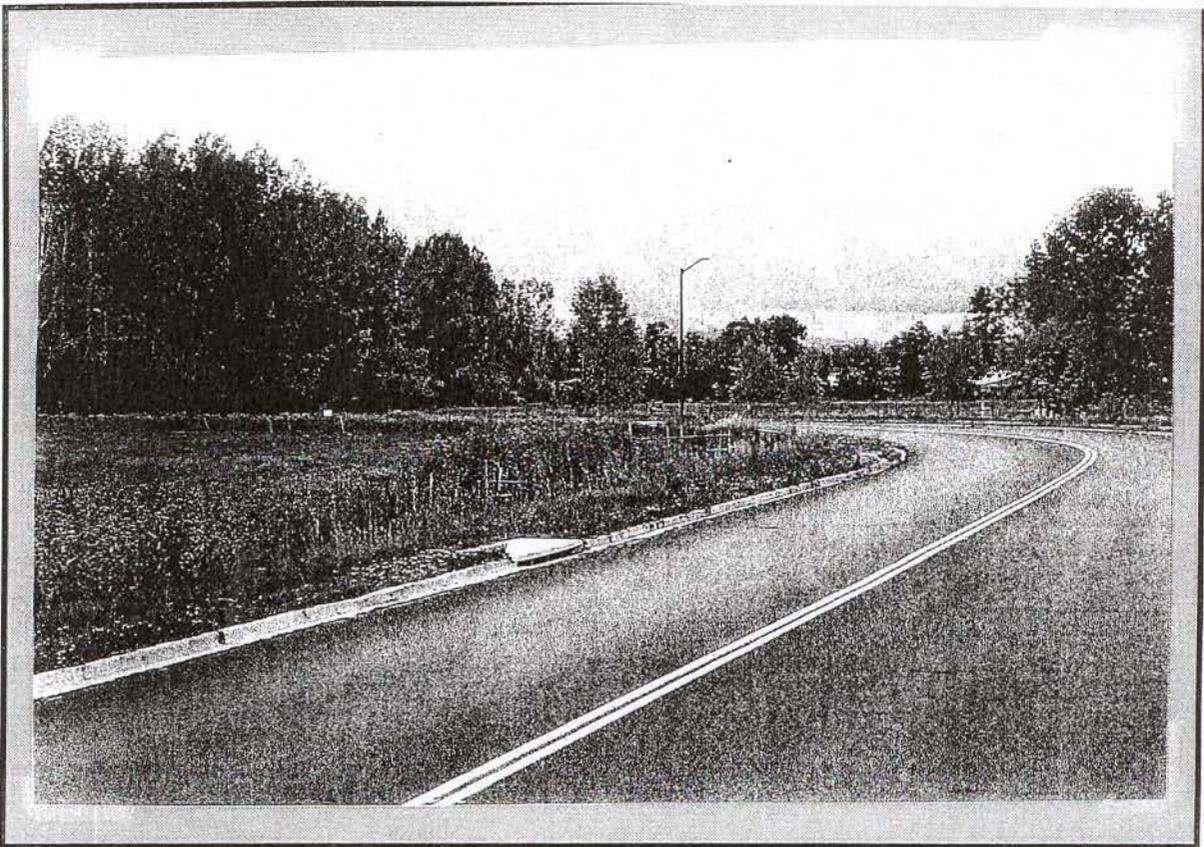


Figure 1

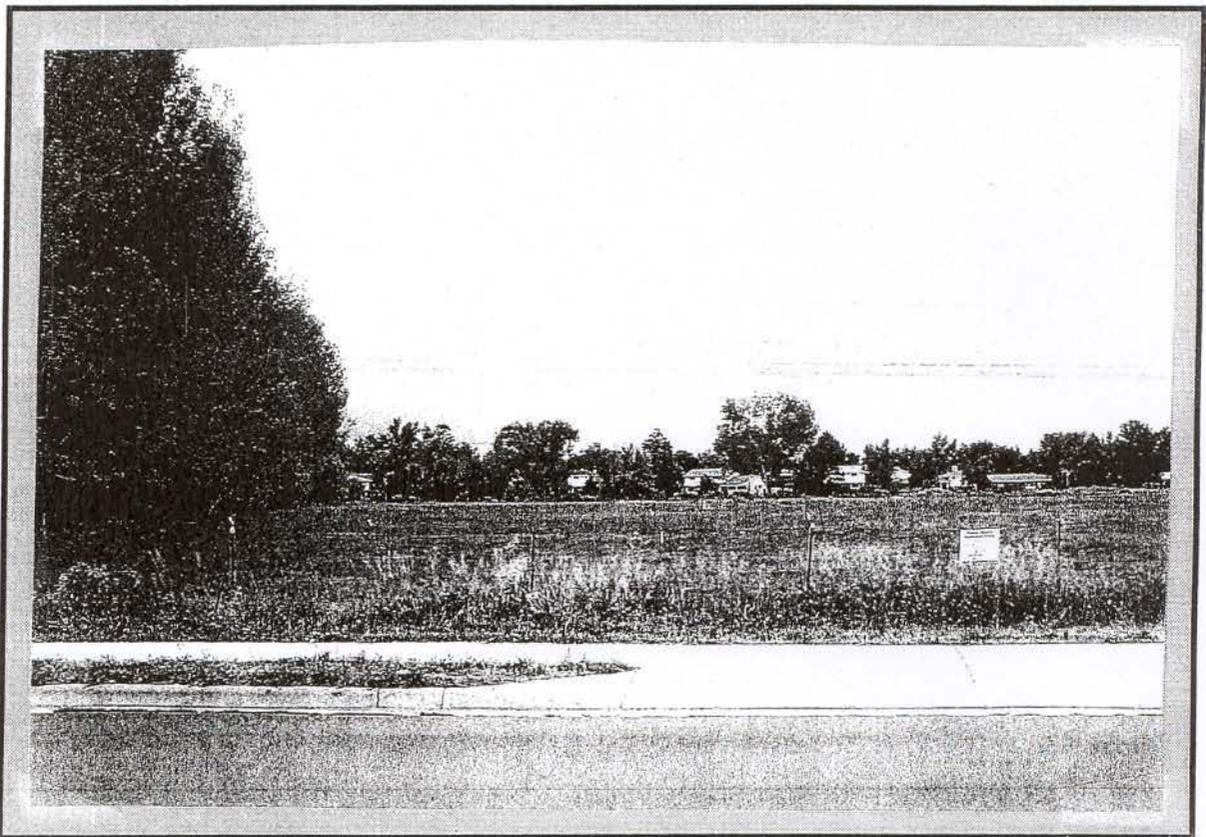
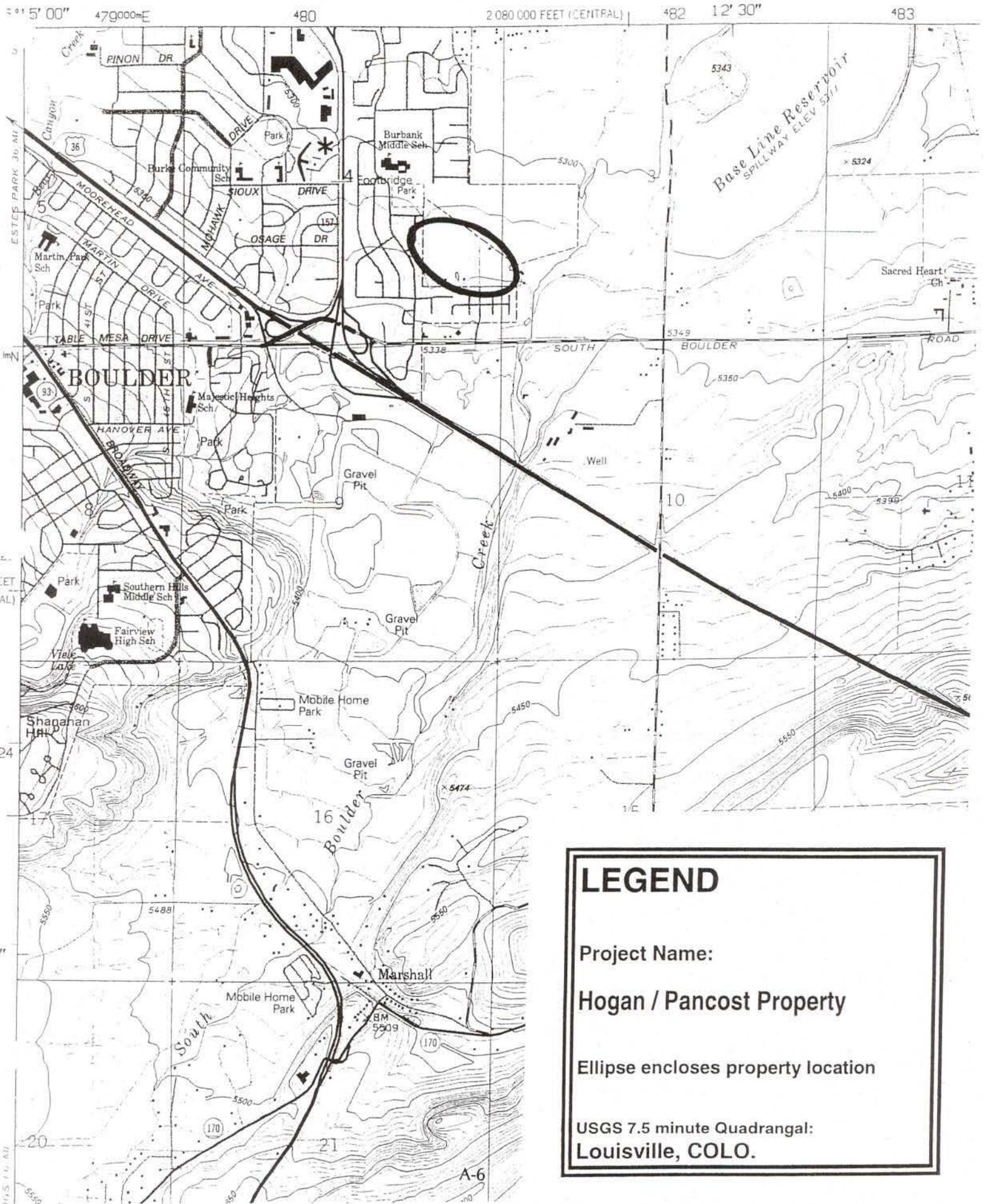


Figure 2.

**Photographs taken in 2007**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY



**LEGEND**

Project Name:  
**Hogan / Pancost Property**

Ellipse encloses property location

USGS 7.5 minute Quadrangal:  
**Louisville, COLO.**

*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

Full Name(s)

Stoecker Ecological Consultants  
Robert E Stoecker

**Location:**

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

Hogan / Pancost Property

U.S.G.S. Quad Name \_\_\_\_\_ County \_\_\_\_\_ Elevation 5280 ft

Township(s) T15 Range(s) R20 W Section(s) 4

¼¼ Section(s) SE¼ of SE¼

UTM Coordinates, Zone 13 Northing 4,426,400 Easting 480,900

Directions to Location ¼ mile north of South Boulder Road on 55th St.

Land Ownership private

**Habitat:**

General Habitat Description

Dense grassy meadow

Dominant Plant Community Native and introduced grasses

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

Ditch \_\_\_\_\_ Other no on-site stream or lake

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)



Mr. Peter Plage  
U.S. Fish and Wildlife Service  
Ecological Services  
Colorado Field Office  
P.O. Box 25486, DFC (MS 65412)  
Denver, CO. 80225-0486

July 24, 2008

Dear Mr. Plage:

This letter is merely to inform you of some minor activities on a project site that was recently cleared by your office of concerns regarding the Preble's Jumping Mouse. The project site is the **Hogan/Pancost Property** located in Boulder, Colorado. Your letter of clearance is dated September 14, 2007.

Because your letter of September 14 calls attention to problems that could possibly arise given any alteration in flow regimes, the client thought it appropriate to inform you of recent maintenance activities along an irrigation ditch located at the southwest edge of the property. This ditch runs to the west and is a lateral that retrieves water from Dry Creek Ditch #2 and returns water to this same ditch.

Only routine maintenance activities were performed along this ditch. These activities involved simply lining the ditch with a plastic membrane liner. Some minor disturbance to the adjacent vegetation occurred, as can be seen in Figures 1 and 2. Dry Creek Ditch #2 (Fig. 3), was not involved in the maintenance.

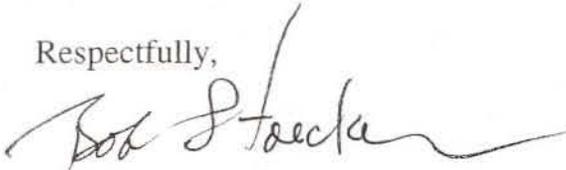
The client has informed me that no changes in flow regimes will occur. And, because the ditch is located well away from any potential jumping mouse habitat, the minor disturbance to the vegetation does not represent a significant impact.

After your review of these materials, would you please inform the client regarding your acceptance or rejection of my habitat evaluation? The client can be reached at the following address?

Mr. Charles Gee  
MACKENZIE HOUSE  
147 Walnut St.  
Suite 102  
Boulder, CO. 80302  
(303) 669-3002

Thank you for your consideration of this request. If you require additional information regarding this project, please feel free to call.

Respectfully,

A handwritten signature in cursive script, appearing to read "Bob Stoecker", with a long horizontal flourish extending to the right.

Robert E. Stoecker, PhD  
Consulting Ecologist

cc. Charles Gee



Figure 1

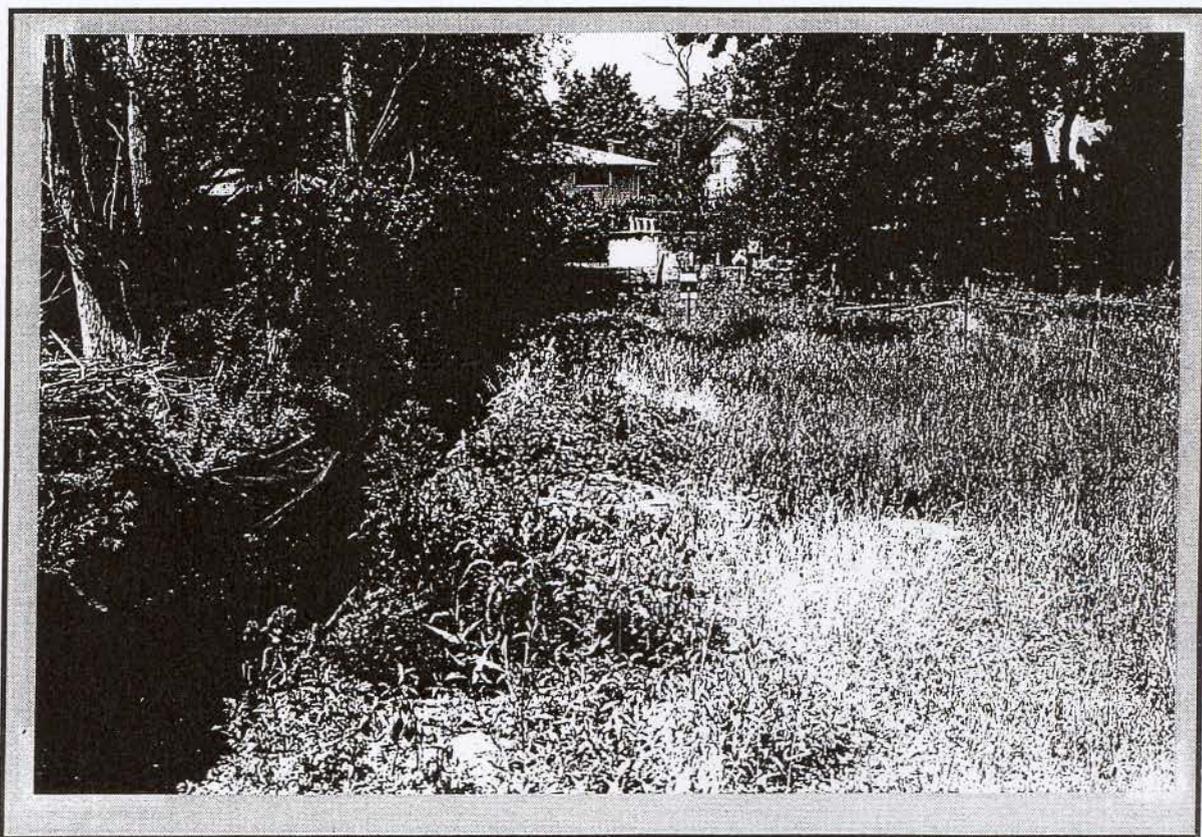


Figure 2.

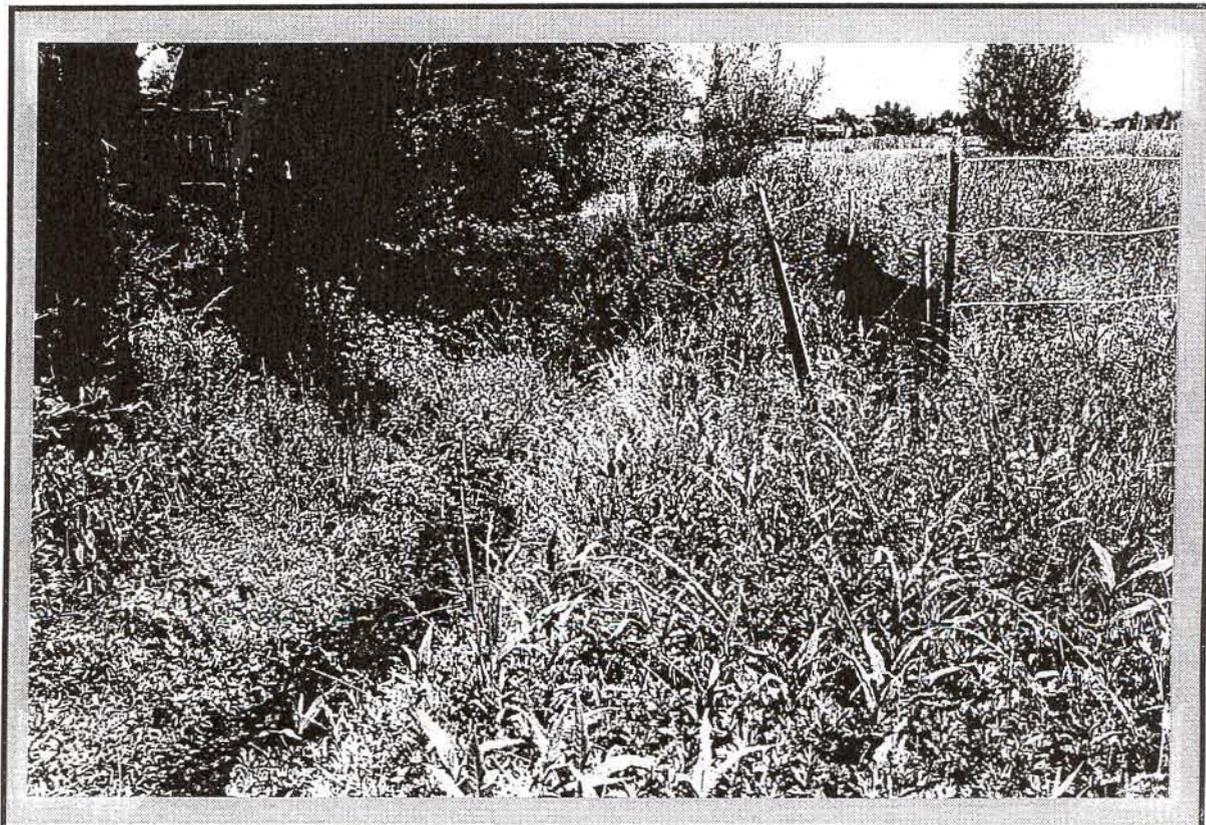
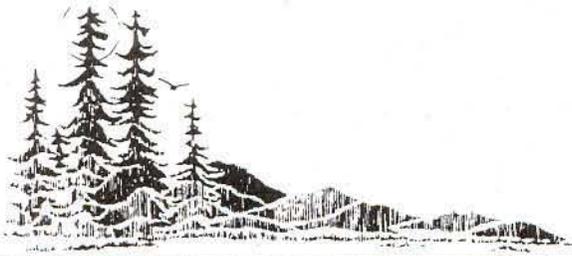


Figure 3.



Mr. Tom Finley  
MACKENZIE HOUSE  
7887 E. Belleview Ave.  
Suite 800  
Englewood, CO. 80111

March 28, 2008

Dear Mr. Finley;

Pursuant to your request, I conducted a recent site visit to the Hogan-Pancost property. The objective, following your request, was to evaluate current habitat conditions relevant to the federally threatened Preble's Jumping Mouse. My site visit was conducted on March 26, 2008.

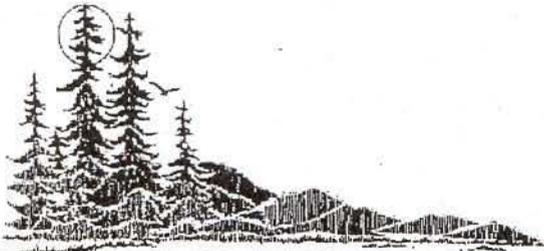
As you are aware, I conducted two previous habitat evaluations of this site (in 2003 and 2007), both of which were presented to the U.S. Fish and Wildlife Service for their review. The USFWS agreed with my assessment that the Hogan-Pancost site is not a critical habitat for the Preble's Jumping Mouse.

On my recent site visit I again examined the entire property. I did not find any significant change in the overall appearance of the vegetation, or detect any important modification of the habitat. If I were to submit another report to the USFWS (which is not required given their approval of my previous evaluation), I would again state that this site does not represent critical habitat for the Preble's Jumping Mouse.

I hope the information provided here is satisfactory for your purposes. If I can be of further assistance, please feel free to call.

Respectfully,

Robert. E. Stoecker, PhD  
Consulting ecologist



Mr. Peter Plage  
U.S. Fish and Wildlife Service  
Ecological Services  
Colorado Field Office  
P.O. Box 25486, DFC (MS 65412)  
Denver, CO. 80225-0486

August 7, 2007

**RE: Update of request for exclusion of survey trapping for the federally threatened Preble's jumping mouse**

Dear Mr. Plage:

A request for excluding the property described below from a trapping survey for the Preble's jumping mouse was submitted to your office on August 8, 2003. On August 25, 2003 your office granted this request. I am enclosing pertinent materials from these correspondences with this report.

My client would like at this time to update the 2003 report and to again request an exclusion of a trapping survey. The project area is the **Hogan/Pancost Property**, located in the city of Boulder, approximately 1/4 mile north of South Boulder Road on 55<sup>th</sup> Street (Section 4, T1S R70W, UTM 4,426,400N 480,900E). After your review of these materials, would you please inform the client regarding your acceptance or rejection of my habitat evaluation? The client can be reached at the following address?

Mr. Tom Finley  
MACKENZIE HOUSE  
7887 E. Belleview Ave.  
Suite 800  
Englewood, CO. 80111  
(720) 240-4580

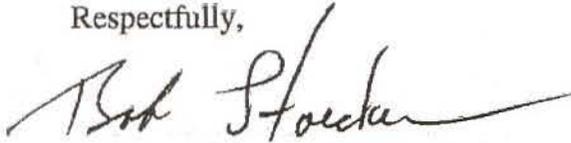
In my 2003 report I presented the following habitat description:

The Hogan/Pancost Property consists of grassy meadows located to either side of 55th Street (Figures 1 and 2). A very small irrigation ditch parallels 55th Street at this location, and South Boulder Creek is approximately 375 feet east of the property boundary. The East Boulder Recreation Center is located immediately northeast of the property and two ponds belonging to this facility are just outside the property boundary. There is no riparian habitat on the Hogan/Pancost property or stands of willow or other mesic shrub. In my opinion, this site is unlikely to support a population of Preble's Jumping mice or to function as a movement corridor and therefore should be excluded from further Preble's Jumping mouse considerations. In my opinion, this site is unlikely to support a population of Preble's Jumping mice or to function as a movement corridor and therefore should be excluded from further Preble's Jumping mouse considerations.

I again visited this site, on August 6, 2007, to update my 2003 habitat evaluation. I am including two recent photographs, and re-submitting the 2003 photographs for your review. In my opinion there has been no significant habitat changes and therefore I would like to request that the property be again excluded from a Preble's jumping mouse live-trapping survey.

Thank you for your consideration of this request. If you require additional information regarding this project, please feel free to call.

Respectfully,



Robert E. Stoecker, PhD  
Consulting Ecologist

cc. Tom Finley



Figure 1



Figure 2.

**Photographs taken in 2007**



Figure 1.

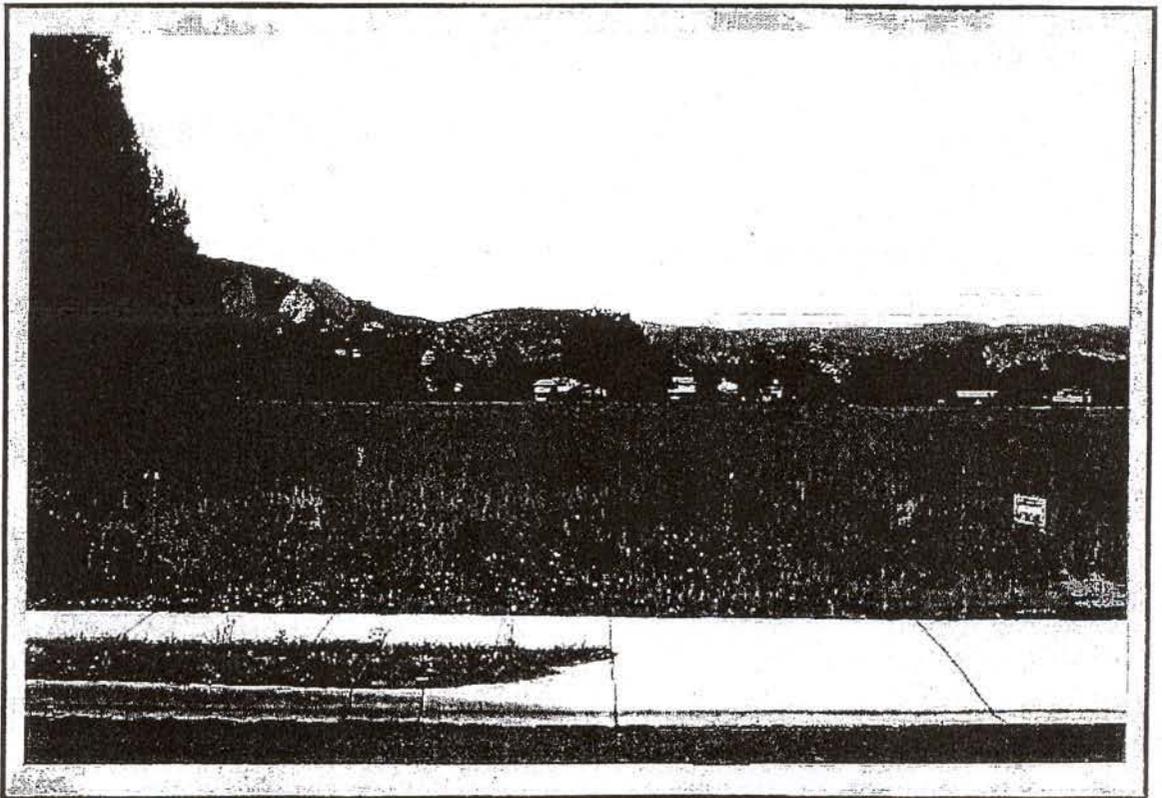


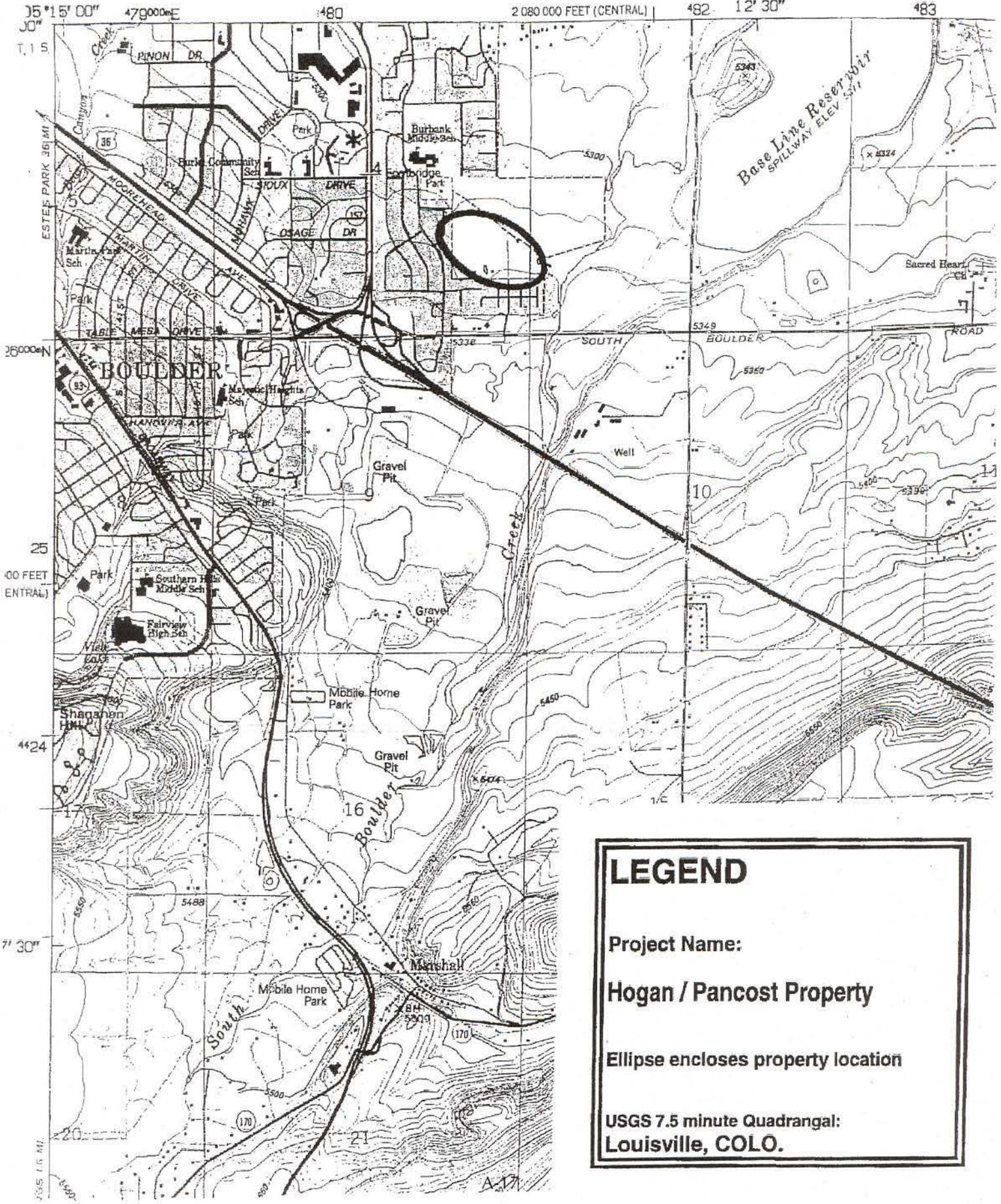
Figure 2.

**Photographs taken in 2003**

A-16

B-29

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY



**LEGEND**

Project Name:  
**Hogan / Pancost Property**

Ellipse encloses property location

USGS 7.5 minute Quadrangal:  
**Louisville, COLO.**

*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

Full Name(s)

Stoecker Ecological Consultants  
Robert E. Stoecker

**Location:**

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

Hogan / Pancast Property  
U.S.G.S. Quad Name \_\_\_\_\_ County \_\_\_\_\_ Elevation 5250 ft  
Township(s) T1S Range(s) R20W Section(s) 4

¼ Section(s) SE¼ & SSW¼

UTM Coordinates, Zone 13 Northing 4,426,400 Easting 480,900

Directions to Location ¼ mile north of South Boulder Road  
on 55th St.

Land Ownership private

**Habitat:**

General Habitat Description

Dense grassy meadow

Dominant Plant Community Native and introduced grasses

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

Ditch \_\_\_\_\_ Other no on-site stream or lake

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)



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Ecological Services  
Colorado Field Office  
755 Parfet Street, Suite 361  
Lakewood, Colorado 80215

IN REPLY REFER TO:  
ES/CO: T&E/PMJM/Other  
Mail Stop 65412

AUG 25 2003

Robert Stoecker  
Stoecker Ecological Consultants, Inc.  
279 Forest Lane  
Boulder, Colorado 80302

Dear Mr. Stoecker:

Based on the authority conferred to the U.S. Fish and Wildlife Service (Service) by the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), the Service reviewed the Preble's meadow jumping mouse, *Zapus hudsonius preblei* (Preble's), habitat assessment report submitted with your letter of August 8, 2003. This report regards the proposed site plan review for the **Hogan/Pancost Property** on 55<sup>th</sup> Street in Boulder County, Colorado.

Based on the information provided, and given your compliance with the Preble's survey guidelines, the Service finds the report acceptable and agrees that a population of Preble's is not likely to be present within the subject area, therefore, a Preble's trapping survey is not needed at this time. Thus, the Service concludes that the proposed project on this site should not have direct adverse affects to Preble's. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered under the ESA.

If the Service can be of further assistance, please contact Barbara Spagnuolo of my staff at (303) 275-2370.

Sincerely,

Susan C. Linner  
Colorado Field Supervisor

cc: Michael Boyers, Del Mar Interests  
Spagnuolo

Reference: BJS\Boulder\Hogan.wpd

December 17, 2008

Mr. Charles Gee  
MH-BCC, LLC  
2020 Nineteenth Street  
Boulder, CO 80302

Dear Mr. Gee:

I recently reviewed the status of the Preble's meadow jumping mouse (PMJM) on the Hogan Pancost property in Boulder County, at the request of David Johnson with Western Ecological Resource.

David and I visited the property on December 15, 2008. He showed me the vegetation features on-site and discussed past and current management operations, with particular attention to irrigation and ditch management. He has also asked me to review past PMJM Hogan Pancost site reports by Dr. Robert Stoecker, and provide any additional information on PMJM that may be pertinent to your project.

Preble's are found within heavily vegetated riparian corridors and associated upland habitats in the Front Range of Colorado and Southeastern Wyoming. PMJM have also been found on ditch habitat in Boulder County, generally within a mile of the source stream (primarily South Boulder and St. Vrain Creeks). These ditches usually have heavy herbaceous or shrub cover. The moist, shaded, and cooler environments associated with streams and ditches provide the core habitat that is required by PMJM; upland habitat coupled with riparian/ditch areas are used for feeding and hibernation sites. PMJM are occasionally found where there is adequate riparian but little upland habitat, but they are never found where there is adequate upland habitat and no riparian habitat.

The Hogan Pancost property falls into the latter category, where there is upland habitat but no suitable riparian/ditch habitat. The ditches on the property do not have the shrub cover that is typically present on PMJM-occupied ditches, and vegetation cover is low. The few, scattered wetland areas on the property also do not provide the necessary cover that PMJM require.

Based on site habitat features, I concur with Dr. Stoecker's assessment that the site would not support a PMJM population, and a live-trapping survey is not needed. I would further add that the U.S. Fish and Wildlife Service (Service) generally provides live-trapping exclusions based on past agricultural and landscaping use of a property, and this

property would qualify for those exclusions. The Service also concurred with Dr. Stoecker's assessment.

You should also be aware of another issue related to PMJM that might affect your property. PMJM are known from many locations on South Boulder Creek; the stretch from El Dorado Canyon to Baseline Road has many positive PMJM surveys, with most of the property owned and managed by the City of Boulder. Meaney et al. (2001) conducted a long-term study on trail impacts on small mammals on South Boulder Creek on City of Boulder Open Space, including the area just east of your eastern parcel. This was a high-profile study and is well known in Boulder County.

Because some of the positive capture locations are in close proximity to your eastern parcel, the Service would generally take a close look at any potential habitat near such sites. Another consideration that might emerge is the possibility that PMJM might use potential habitat on your property to travel, or emigrate to new habitats. Although Dr. Stoecker mentioned this in his report, I want to provide a few details on this issue because it is the primary biological concern related to PMJM and your property.

The issue that might surface in future discussions is: "Although the property does not support the habitat needed by a PMJM population, would PMJM use the Hogan Pancost property to move into other adjacent habitats?" Since such movement is usually along riparian corridors or ditches, the question would be refined by asking "do PMJM use the ditches on Hogan Pancost to move to adjacent habitats?"

In this case, the only source population is from South Boulder Creek east of the property. If PMJM entered the Hogan Pancost property and traveled along a ditch, could this pathway be a viable corridor to suitable habitat? I do not believe so for the following reasons:

- The sparse vegetation on the ditches and laterals would not favor PMJM use; and
- There is no viable PMJM habitat to the west, south and north of the Hogan Pancost property. There is established residential development to the south and west of the property (obviously non-habitat). The East Boulder Recreation Center lies to the north, with maintained playing fields, dog walking areas, and the main building and associated structures, none of which are suitable habitat.

Thus, any potential travel by PMJM from the eastern source across the Hogan Pancost property (which is unlikely to begin with) would lead to a "dead end," and the animal would be unsuccessful in the attempt to move to new habitat.

Although the Service did not mention this directly in their concurrence letter, it is likely they took this into consideration when they made their decision.

Please call if you have any further questions on these issues.

Regards,



Mark Bakeman, Ph.D.  
President, Ensign Technical Services, Inc.

cc:

David Johnson, Western Ecological Resource  
file: 2008-12-01M

#### References

Meaney, C.A., A.K. Ruggles, N.W. Clippinger, and B.C. Lubow. 2001. The impact of recreational trails and grazing on small mammals in the Colorado piedmont. Submitted to The Prairie Naturalist, February 2001.

# Wildlife Specialties LLC

*“Practical, science-based applications for wildlife and ecological studies benefiting all clients”*



## Appendix B 2004 Survey Field Data Compilation Form

**Preble's Meadow Jumping Mouse, *Zapus hudsonius preblei***  
**2004 Survey Field Data Compilation Form**

TRAPPING SURVEY                       EVALUATED, NOT TRAPPED

Fill out both sections 1 and 2 if trapping survey, fill out section 1 only if habitat evaluation (ie. not trapped). Compilation forms needed for updated habitat evaluations and site disqualification requests.

**SECTION 1**

Surveyor: Jerald M. Powell  
Date of Site/Habitat Assessment Trapping completed nights of Aug 21-24 2016.  
Organization/Company Wildlife Specialties  
Full Name(s) Jerald M. Powell

**Location:**

Project Name (if applicable) Hogan Parcourt  
Project Description (nearby road intersection, type of impact, etc.) Project site located in SE Boulder Co. South of East Boulder Commun. Center. 55th Street bisects project  
U.S.G.S. Quad Name Boulder County Boulder Elevation \_\_\_\_\_  
Township(s) 1 North Range(s) 70 West Section(s) 3+4  
1/4 Section(s) \_\_\_\_\_  
UTM Coordinates, Zone 13 Northing 480757 Easting 4426740  
UTM Coordinate Datum NAD27  NAD83   
Directions to Location Take 55th Street North From Arapahoe Road. Project area is due south of East Boulder Comm. Center  
Land Ownership Private

**Habitat:**

General Habitat Description Highly degraded non-native invasive species dominated pasture (West Parcel). East Parcel is wet meadow.  
Dominant Overstory Plant Community Creek willow, Russian Olive  
Dominant Understory Plant Community weeds  
Current Land Use West Parcel - horse pasture East Parcel - not used  
Drainage Name: \_\_\_\_\_ Type: Perennial Stream \_\_\_\_\_  
Ephemeral Stream \_\_\_\_\_ Pond/Lake \_\_\_\_\_ Ditch  Other \_\_\_\_\_

**SECTION 2:**

*Z. h. preblei* found? Yes  No  Dates of Survey Nights of 8/21-24/2016

**Trapping Information:**

Type of Traps Shermand Type of Bait Sweetened rolled oats/corn  
% Available (unsprung) 91 Number of Nights Trapped 7204  
Total Trapnights 720  
Weather conditions prior to and during survey Warm and seasonal, night of 24th rain and cool.

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

Dog parks to the N. Captured Mus Musculus, Raccoons, cats likely

**Appendix C. Colorado Parks & Wildlife Threatened and Endangered List**

COLORADO PARKS & WILDLIFE



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### Threatened and Endangered List

COMMON NAME	SCIENTIFIC NAME	STATUS*
<b>AMPHIBIANS</b>		
Boreal Toad	Bufo boreas boreas	SE
Couch's Spadefoot	Scaphiopus couchii	SC
Great Plains Narrowmouth Toad	Gastrophryne olivacea	SC
Northern Cricket Frog	Acris crepitans	SC
Northern Leopard Frog	Rana pipiens	SC
Plains Leopard Frog	Rana blairi	SC
Wood Frog	Rana sylvatica	SC
<b>BIRDS</b>		
American Peregrine Falcon	Falco peregrinus anatum	SC
Bald Eagle	Haliaeetus leucocephalus	SC
Burrowing Owl	Athene cunicularia	ST

Columbian Sharp-Tailed Grouse	<i>Tympanuchus phasianellus columbianus</i>	SC
Ferruginous Hawk	<i>Buteo regalis</i>	SC
Greater Sage Grouse	<i>Centrocercus urophasianus</i>	SC
Greater Sandhill Crane	<i>Grus canadensis tabida</i>	SC
Gunnison Sage-Grouse	<i>Centrocercus minimus</i>	SC
Least Tern	<i>Sterna antillarum</i>	FE, SE
Lesser Prairie-Chicken	<i>Tympanuchus pallidicinctus</i>	FT, ST
Long-Billed Curlew	<i>Numenius americanus</i>	SC
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	FT, ST
Mountain Plover	<i>Charadrius montanus</i>	SC
Plains Sharp-Tailed Grouse	<i>Tympanuchus phasianellus jamesii</i>	SE
Piping Plover	<i>Charadrius melodus circumcinctus</i>	FT, ST
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	FE, SE
Western Snowy Plover	<i>Charadrius alexandrinus</i>	SC
Western Yellow-Billed Cuckoo	<i>Coccyzus americanus</i>	SC
Whooping Crane	<i>Grus americana</i>	FE, SE
<b>FISH</b>		
Arkansas Darter	<i>Etheostoma cragini</i>	ST
Bonytail	<i>Gila elegans</i>	FE, SE
Brassy Minnow	<i>Hybognathus hankinsoni</i>	ST
Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	FE, ST
Colorado River Cutthroat Trout	<i>Oncorhynchus clarki pleuriticus</i>	SC
Colorado Roundtail Chub	<i>Gila robusta</i>	SC

Common Shiner	<i>Luxilus cornutus</i>	ST
Flathead Chub	<i>Platygobio gracilus</i>	SC
Greenback Cutthroat Trout	<i>Oncorhynchus clarki stomias</i>	FT, ST
Humpback Chub	<i>Gila cypha</i>	FE, ST
Iowa Darter	<i>Etheostoma exile</i>	SC
Lake Chub	<i>Couesius plumbeus</i>	SE
Mountain Sucker	<i>Catostomus playtrhynchus</i>	SC
Northern Redbelly Dace	<i>Phoxinus eos</i>	SE
Plains Minnow	<i>Hybognathus placitus</i>	SE
Plains Orangethroat Darter	<i>Etheostoma spectabile</i>	SC
Rio Grande Chub	<i>Gila pandora</i>	SC
Rio Grande Cutthroat Trout	<i>Oncorhynchus clarki virginalis</i>	SC
Rio Grande Sucker	<i>Catostomus plebeius</i>	SE
Razorback Sucker	<i>Xyrauchen texanus</i>	FE, SE
Southern Redbelly Dace	<i>Phoxinus erythrogaster</i>	SE
Stonecat	<i>Noturus flavus</i>	SC
Suckermouth Minnow	<i>Phenacobius mirabilis</i>	SE
<b>MAMMALS</b>		
Black-Footed Ferret	<i>Mustela nigripes</i>	FE, SE
Black-Tailed Prairie Dog	<i>Cynomys ludovicianus</i>	SC
Botta's Pocket Gopher	<i>Thomomys bottae rubidus</i>	SC
Gray Wolf	<i>Canis lupus</i>	FE, SE
Grizzly Bear	<i>Ursus arctos</i>	FT, SE

Kit Fox	<i>Vulpes macrotis</i>	SE
Lynx	<i>Lynx canadensis</i>	FT, SE
Northern Pocket Gopher	<i>Thomomys talpoides macrotis</i>	SC
Preble's Meadow Jumping Mouse	<i>Zapus hudsonius preblei</i>	FT, ST
River Otter	<i>Lontra canadensis</i>	ST
Swift fox	<i>Vulpes velox</i>	SC
Townsend's Big-Eared Bat	<i>Corynorhinus townsendii pallescens</i>	SC
Wolverine	<i>Gulo gulo</i>	SE
<b>REPTILES</b>		
Triploid Checkered Whiptail	<i>Cnemidophorus neotesselatus</i>	SC
Midget Faded Rattlesnake	<i>Crotalus viridis concolor</i>	SC
Longnose Leopard Lizard	<i>Gambelia wislizenii</i>	SC
Yellow Mud Turtle	<i>Kinosternon flavescens</i>	SC
Common King Snake	<i>Lampropeltis getula</i>	SC
Texas Blind Snake	<i>Leptotyphlops dulcis</i>	SC
Texas Horned Lizard	<i>Phrynosoma cornutum</i>	SC
Roundtail Horned Lizard	<i>Phrynosoma modestum</i>	SC
Massasauga	<i>Sistrurus catenatus</i>	SC
Common Garter Snake	<i>Thamnophis sirtalis</i>	SC
<b>MOLLUSKS</b>		
Rocky Mountain Capshell	<i>Acroloxus coloradensis</i>	SC
Cylindrical Papershell	<i>Anodontoides ferussacianus</i>	SC

### \*Status Codes

- FE = Federally Endangered
- FT = Federally Threatened
- SE = State Endangered
- ST = State Threatened
- SC = State Special Concern (not a statutory category)

### Resources

- [Species Profiles](#)

### Colorado's State Wildlife Action Plan (SWAP)



The approved State Wildlife Action Plan identifies priority species & habitats that need conservation efforts in the state, & potential conservation actions that can address threats these species & habitats face.

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