NATURAL FEATURES AND WETLANDS REPORT

for

Sterling Ranch Sketch Plan Amendment
El Paso County, CO

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INTRODUCTION

Classic SRJ, LLC ("Applicant") has retained Bristlecone Ecology, LLC ("B.E." or "Agent") to perform a habitat and wetland assessment and prepare a Natural Features and Wetlands Report for the proposed sketch plan amendment to the Sterling Ranch residential development project ("Project"), located in unincorporated El Paso County (EPC), Colorado. Contact information for both Applicant and Agent is provided below:

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1.1. Purpose and Goals

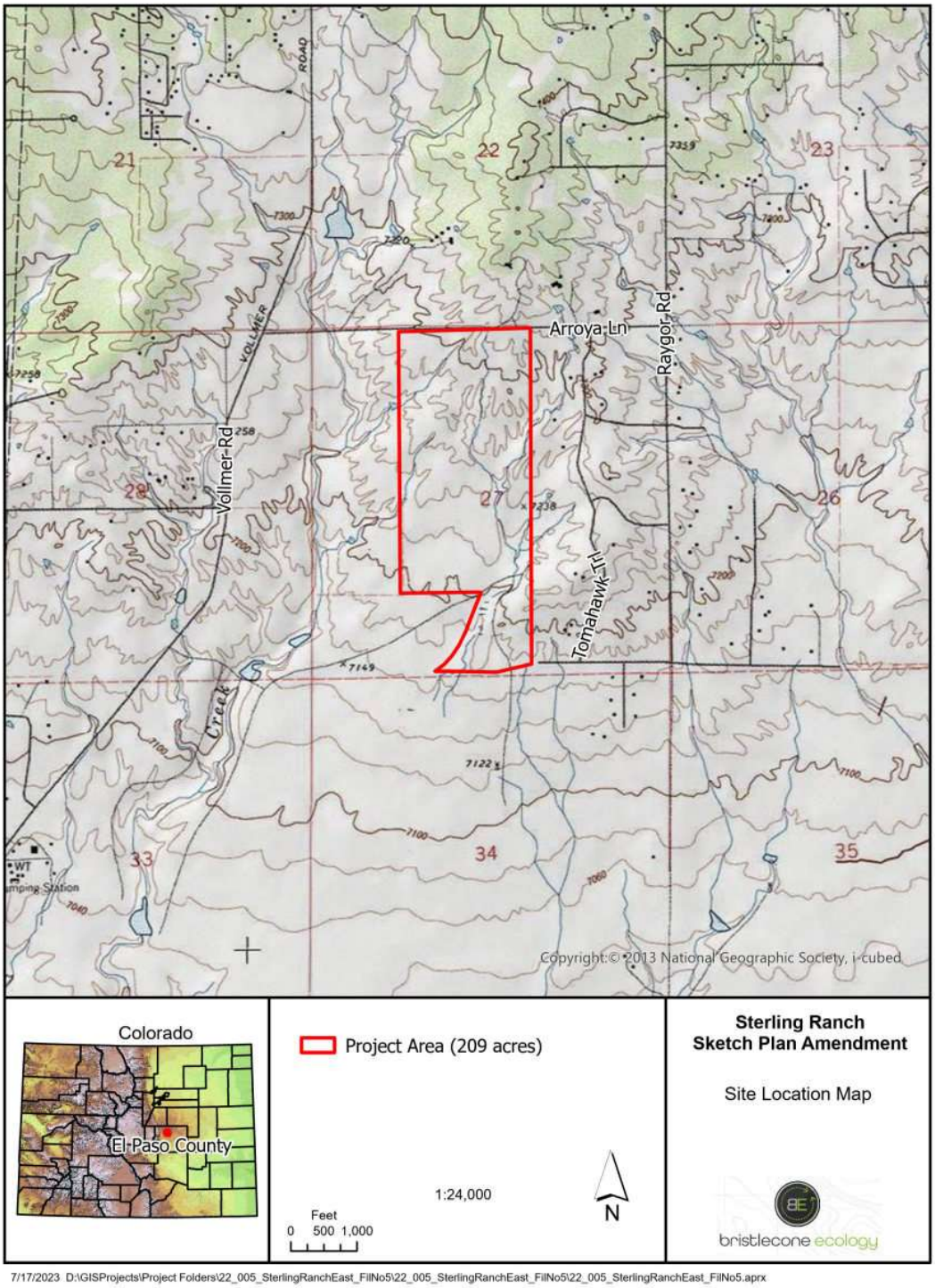
The purpose of this Natural Features and Wetlands Report is to document natural resources and existing site conditions in order to identify potential environmental constraints that may affect the development of the Project. In addition, a goal of this report is to provide guidance on regulatory issues that could influence site development in accordance with development planning and application submittals in EPC. Environmental resources and constraints addressed include:

- Vegetation
- Soils
- Aquatic Resources/Wetlands/Waters of the U.S. (WOTUS)
- Wildfire Hazard
- Flood Hazard
- Wildlife Impacts
- Federal and State Listed Threatened and Endangered (T&E) Species

1.2. Project Description and Site Location

The amendment to the Sterling Ranch sketch plan involves density changes to approximately 209 acres of the Sterling Ranch site, hereinafter referred to as the Project Area or Site. The Project Area is located east of Vollmer Road, north of E. Woodmen Road, south of Arroya Road, and east of Sand Creek; it will be intersected by the future Sterling Ranch Road, and it is bounded on all sides by scattered rural residential development (**Figure I**: *Site Location Map*). The Project will consist of single-family residential lots, open space tracts, stormwater detention facilities, local roads, utilities, and other associated facilities and infrastructure. The site is located on a portion of Section 27 in Township 12S, Range 65W, and can be found on the U.S. Geological Survey's (USGS) Falcon NW 7.5-minute quadrangle (USGS 2020). Topography of the Project consists of rolling foothills grasslands on the edge of the pine-oak woodlands of the Black Forest to the north and west. Portions of the site are already being developed to support the construction of other residential neighborhoods within the greater Sterling Ranch property.

Figure 1: Site Location Map



2.0 METHODOLOGY

B.E. performed a desktop review to gather background information about the environmental setting of the Project area. Publicly available data sources queried via desktop included:

- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) data
- USFWS Critical Habitat Portal
- Species profiles and spatial data from Colorado Parks and Wildlife (CPW)
- USFWS National Wetland Inventory (NWI) data
- USGS National Hydrography Dataset (NHD)
- USGS aerial imagery
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panels
- Google Earth current and historic aerial imagery
- Colorado State Forest Service (CSFS) Wildfire Hazard Maps
- National Resources Conservation Service (NRCS) county soil survey data
- Colorado Natural Heritage Program (CNHP) Survey of Critical Biological Resources

Following the desktop review of these resources, a site reconnaissance was conducted on July 7, 2023, to field-verify results of the review and identify potential impacts to these resources and constraints to development. The field reconnaissance focused on identifying and mapping wetland habitat and potential WOTUS, on classifying vegetation communities on the site, and on identifying suitable wildlife habitat, particularly that which could support T&E and sensitive species.

3.0 ENVIRONMENTAL SETTING

The Project Area is located within the Foothill Grasslands ecoregion in Colorado (Chapman et al. 2006). Topography of the Project Area consists mainly of a mix of flat to rolling grasslands, with the Sand Creek stream corridor to the west; pine woodlands interspersed with a few shrubs are located less than a mile to the north of the site. The Foothills Grasslands Ecoregion is composed of a mixture of tall and mid-grasses and isolated pine woodlands (Chapman et al. 2006). Dominant species in the ecoregion include little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), and yellow Indiangrass (*Sorghastrum nutans*) (Chapman et al. 2006).

Elevations of the Project site range between approximately 7,150 and 7,250 feet above mean sea level (AMSL). The Project site contains no Colorado Natural Heritage Conservation Areas or Potential Conservation Areas according to the CNHP (2022), and according to the USFWS' Information for Planning and Conservation (IpaC; 2022), does not contain Wildlife Refuges or Hatcheries. The area has been used historically as rangeland, but residential and commercial development is increasing steadily.

3.1. Vegetation

The entire Project site is within the Foothill Grasslands, with the predominant vegetation corresponding to that ecoregion. Needle-and-thread grass (*Hesperostipa comata*), smooth brome (*Bromus inermis*), blue grama (*Bouteloua gracilis*), fringed sage (*Artemisia frigida*), slender wheatgrass (*Elymus trachycaulus*), and Junegrass (*Koeleria macrantha*) are the dominant species in uplands throughout the site. Other upland species present include white-stem evening primrose (*Oenothera albicaulis*), spiderwort (*Tradescantia occidentalis*), and field sagewort (*Artemisia campestris*), among others. Within wetter areas, Baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), redtop (*Agrostis gigantea*), foxtail barley (*Hordeum jubatum*), and Dudley's rush (*Juncus dudleyi*) are the dominant species, with duckweed (*Lemna* sp.) also occurring in the wettest areas where ponding occurs. The only shrub found on the site was Wood's rose (*Rosa woodsii*) and there were no trees present on the site. Much of the site has been disturbed by cattle grazing, but vegetative cover is relatively extensive. Diversity is moderate for this ecoregion, and the structure of vegetation in the uplands is somewhat poorly developed.

Several noxious weeds are present at the site, mostly scattered throughout the property where disturbance by cattle and construction is most prevalent. Weed species observed included diffuse knapweed (*Centaurea diffusa*), Scotch thistle (*Onopordum acanthium*), downy brome (*Bromus tectorum*), and great mullein (*Verbascum thapsus*).

B.E. reviewed CNHP data for the Falcon NW, Colorado 7.5-minute quadrangle, which summarizes vegetation communities in the state by USGS quadrangle. Data were reviewed to determine the probability of the presence/absence of significant natural communities, rare plant areas, or riparian corridors that may be within the Project area. Based on CNHP's data and the site reconnaissance, the probability of these plant communities being impacted by Project development is described below in Table 1.

Table 1. Potentially Impacted Vegetation Communities (CNHP 2022)

Plant Community (Type)	Status[1]	Presence and Location	Probability of Impacts
Andropogon gerardii – Sporobolus heterolepis Western Foothills Grassland (Xeric Tallgrass Prairie)	G2, S1	Mesic habitats of the Rocky Mountain foothills and riverine habitats. This type is a regional endemic found only in eastern Colorado, western Oklahoma, and possibly elsewhere. Reportedly occurs in the nearby Black Forest.	None. Community is not present in the Project area.
Bouteloua gracilis – Bouteloua dactyloides Grassland (Shortgrass Prairie)	G4, S2	Found in flat to rolling uplands throughout much of the central and southern Great Plains. Soil type is often sandy loam. A variety of other short graminoids make up much of the remaining habitat.	Expected. These species cover portions of the Project area, but true Shortgrass Prairie is not the primary grassland community at the site.
Hesperostipa comata – Bouteloua gracilis – Carex filifolia Grassland (Montane Grasslands)	G5, S2	Occurs in relatively mesic savanna habitats, on gentle to moderate south- and west-facing slopes. Dense habitat occurs in some areas of the Black Forest.	None. Project area lies on the fringe of this community.
Pinus ponderosa – Quercus gambelii Woodland (Foothills Ponderosa Pine Scrub Woodlands)	G5, S5	This is a widely distributed and broadly defined habitat type in the foothills and mountains. Present in the Black Forest in Colorado wherever ponderosa pine overstory coincides with at least 5% cover of Gambel oak	None. Due north and northwest this is the primary wooded community present, but it does not extend to the Project site.

[1]G=Global; S=State
1=Critically Imperiled; 2=Imperiled; 3=Rare or Uncommon; 4=Widespread, Abundant, and Apparently Secure; 5=Demonstrably Widespread, Abundant, and Secure.

3.2. Soils

Soil survey data and reports were reviewed to determine the potential for the presence of geologic hazards within the Project (NRCS 2022a). County soil survey data indicate that the site is composed primarily of Pring coarse sandy loam (3 to 8 percent slopes; 89.5% of Project area) and Columbine gravelly sandy loam (1 to 9 percent slopes; 10.5% of Project area) (NRCS 2022a). These soils are the dominant series occupying the Project area; there are also minor components (called "inclusions") within each series or consociation that could contribute to the overall soil composition at the site.

The NRCS provides information on soil properties that would influence the development of building sites for dwellings with and without basements, as well as small commercial buildings, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Qualitative soil ratings are assigned to each major soil group and include 'Not Limited', 'Somewhat Limited', and 'Very Limited'. 'Not Limited' indicates that the soil type has properties that are very favorable for the specified type of construction. 'Somewhat

Limited' indicates that the soil type has properties that are moderately favorable for the specified type of construction. These limitations can generally be overcome through planning and design considerations. 'Very Limited' indicates that the soil type has properties that cannot generally be overcome through design and planning considerations (NRCS 2022b). Based on the soils present, the entire site is rated 'Not Limited' for dwellings with or without basements (NRCS 2022b). For small commercial buildings, the Pring series are rated 'Somewhat Limited' while the Columbine series is rated 'Not Limited' (NRCS 2022b). In terms of area, 10.5% of the site is rated 'Not Limited' and the remainder of the site (89.5%) is rated 'Somewhat Limited' for commercial buildings (NRCS 2022b).

B.E. reviewed the hydric soil ratings for all soil components present on the Project site to aid in the identification of wetland habitats during the site reconnaissance. Hydric soils are those that form under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions, and their formation is required in order for wetlands to become established. Both primary soil series occurring on the site (Pring and Columbine) are described as having a low hydric rating in El Paso County, with Columbine having a rating of 2 and Pring a rating of zero. Hydric ratings are on a scale of 1 to 100, with 100 having greater hydric components and zero having no hydric components (NRCS 2022a). The Pleasant soil series, a minor component of both primary series on the site, is rated as hydric in El Paso County and is typically found in depressions and drainages where ponding can regularly occur (NRCS 2022c). Pleasant soil is likely found in the wetter portions of the site where wetlands occur. Based on these ratings, the overall suitability of the site for the development of hydric soils, and thus the presence of wetlands, is moderate in depressions and wetter areas, and very low in other areas.

The Columbine soil series is grouped into Hydrologic Group A, while the Pring series is grouped into Hydrologic Group B, according to NRCS soils data (NRCS 2022d). The 'A' grouping includes soils that have a high infiltration rate, which results in the soil having a corresponding high rate of surface and ground water transmission. The 'B' grouping has a moderate infiltration rate, which results in the soils having a moderate rate of water transmission. Additional, detailed soil data for the Project will be presented in a soils/geology/geotechnical report that will be submitted separately.

Figure 2: NRCS SSURGO Soils Map

3.3. Aquatic Resources

Aquatic resources include jurisdictional wetlands and other regulated Waters of the U.S. (WOTUS) such as streams/rivers, ponds/lakes, and ditches, as well as non-regulated wetlands, streams/rivers, ponds/lakes, ditches, and other surface water features. The USFWS' NWI and USGS' NHD datasets were reviewed for the possible presence of wetlands and streams, respectively, within the Project Area. Aerial imagery (USDA 2019 and Google 2021) was reviewed to locate aquatic features not depicted in the NWI and NHD datasets. NHD and NWI data are notoriously inaccurate, necessitating field inspection to verify the presence or absence of the resources depicted in these datasets. Aquatic features that were depicted in the data can be seen in **Figure 3**: *Aquatic Resources Desktop Review*, and include:

- One unnamed tributary that drains to East Fork Sand Creek and eventually Sand Creek, labeled in the NWI as a Riverine, intermittent, streambed, seasonally flooded wetland (R4SBC) and identified as a stream/river in the NHD. This unnamed tributary forks into three R4SBC wetlands near the eastern border in the southern third of the Project area, and then forks a second time into two R4SBC wetlands near the center of the Project area. This feature is, however, listed as one single feature in the NWI.
- Two other unnamed tributaries, labeled in the NWI as R4SBC and as streams in the NHD, are shown to start within the northwestern center of the Project Area and flow west out of the Project Area.
- One wetland labeled in the NWI as a Riverine, perennial, unconsolidated bottom wetland (R5UBH) and identified as a swamp/marsh in the NHD.

Because these desktop data are often inaccurate, the watercourses and other aquatic features identified in the preliminary desktop analysis were inspected in the field to assess their presence/absence and jurisdictional potential. During the site visit, all the features identified in the NWI and NHD were generally present in locations matching the desktop review data, as well as one additional wetland area northwest of the northernmost wetland shown in the NWI. These wetlands did not appear to connect hydrologically to downstream WOTUS and thus may require an Approved Jurisdictional Determination (AJD) from the USACE. No other aquatic features were present on the site except for other construction areas that may ephemerally hold water in direct response to precipitation. A preliminary wetland assessment does not constitute a formal wetland delineation, and a formal delineation is recommended to accurately determine the boundaries of wetlands on the site. The follow aquatic features were preliminarily mapped (also see **Appendix A:** *Photographic Log*):

- The marsh area depicted in the desktop review was confirmed to be present and in the same general location. It consisted of a series of hydrologically connected ponded marsh areas dominated by Baltic rush and Nebraska sedge, with some Dudley's rush and foxtail barley. Duckweed was dominant in the ponded areas, with a green algal species also seen in some areas. Flowing water was observed draining from the marsh area into the southernmost wetland in the Project area and was seen trickling from the edge of the marsh during the site visit (see **Appendix A**).
- The various R4SBC wetlands depicted in the desktop review were present throughout the site as depicted, with Baltic rush dominating the wettest areas. There was surface water

and ponding present throughout these areas during the time of the survey. These wetlands are likely PEM1C wetlands rather than R4SBC as they are depicted in the NWI; a formal wetland delineation would be needed to confirm the wetland types present.

- One additional wetland was identified northwest of the northernmost wetland identified in the NWI. This wetland was dominated by Baltic rush. Surface water was present at the time of the survey.
- The only features not confirmed as depicted in the NWI and NHD were a few areas that have already been disturbed, including the area around the water tank at the northern border of the Project Area, and a construction road that runs north to south through the Project Area. These features do exist to a lesser extent than shown in the NWI/NHD data in areas that have not been previously impacted. A small culvert has been built where the wetland is shown to cross the construction road near the northern center of the Project area (**Figure 3**).

Based on the information obtained from the site reconnaissance, there are wetlands on the site associated with the current Project that may or may not be jurisdictional wetlands (see **Figure 4**: *Wetland Location Map*). Wetlands on the site did not appear to connect hydrologically to downstream WOTUS.

Figure 3: Aquatic Resources Desktop Review

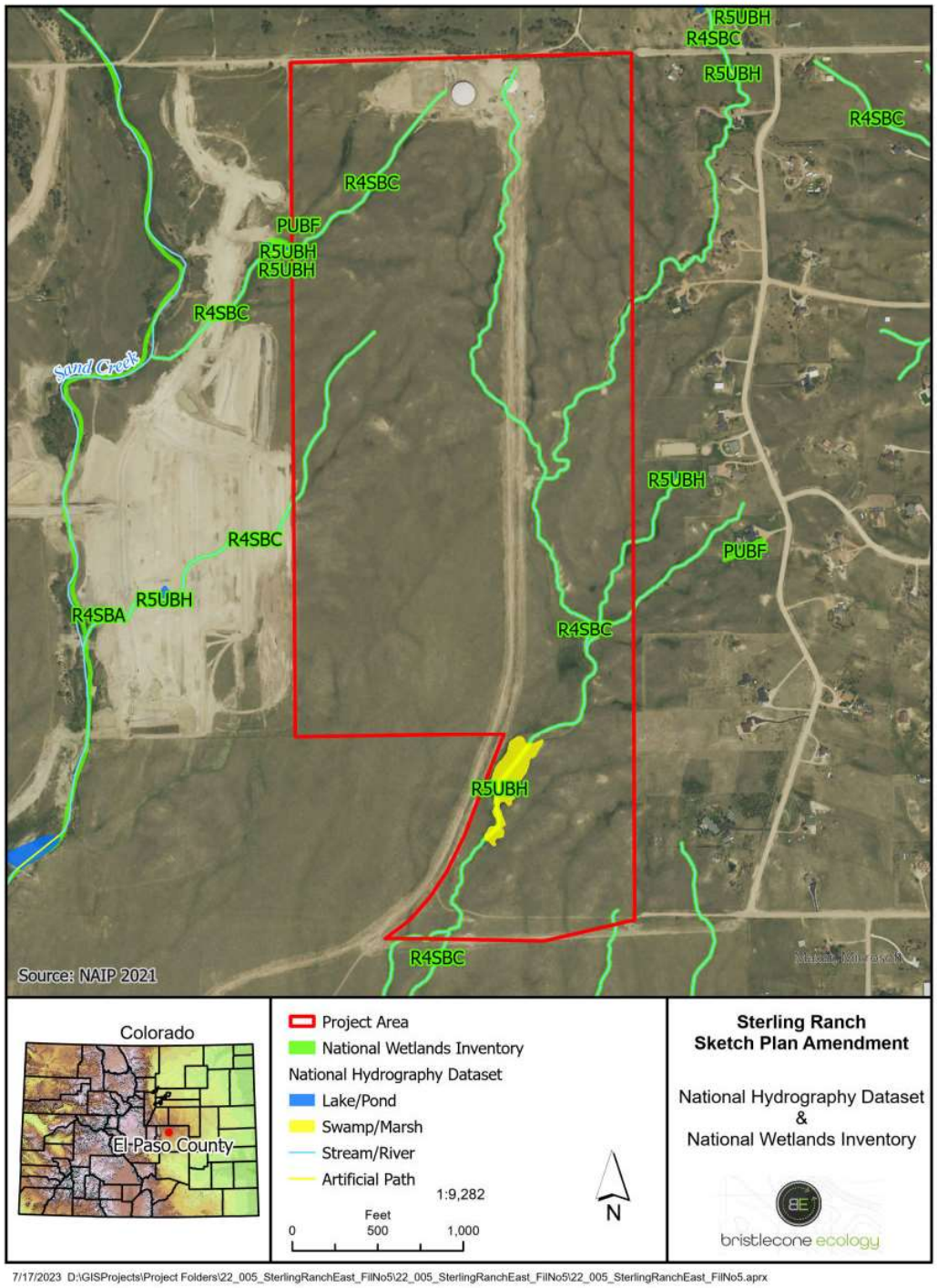
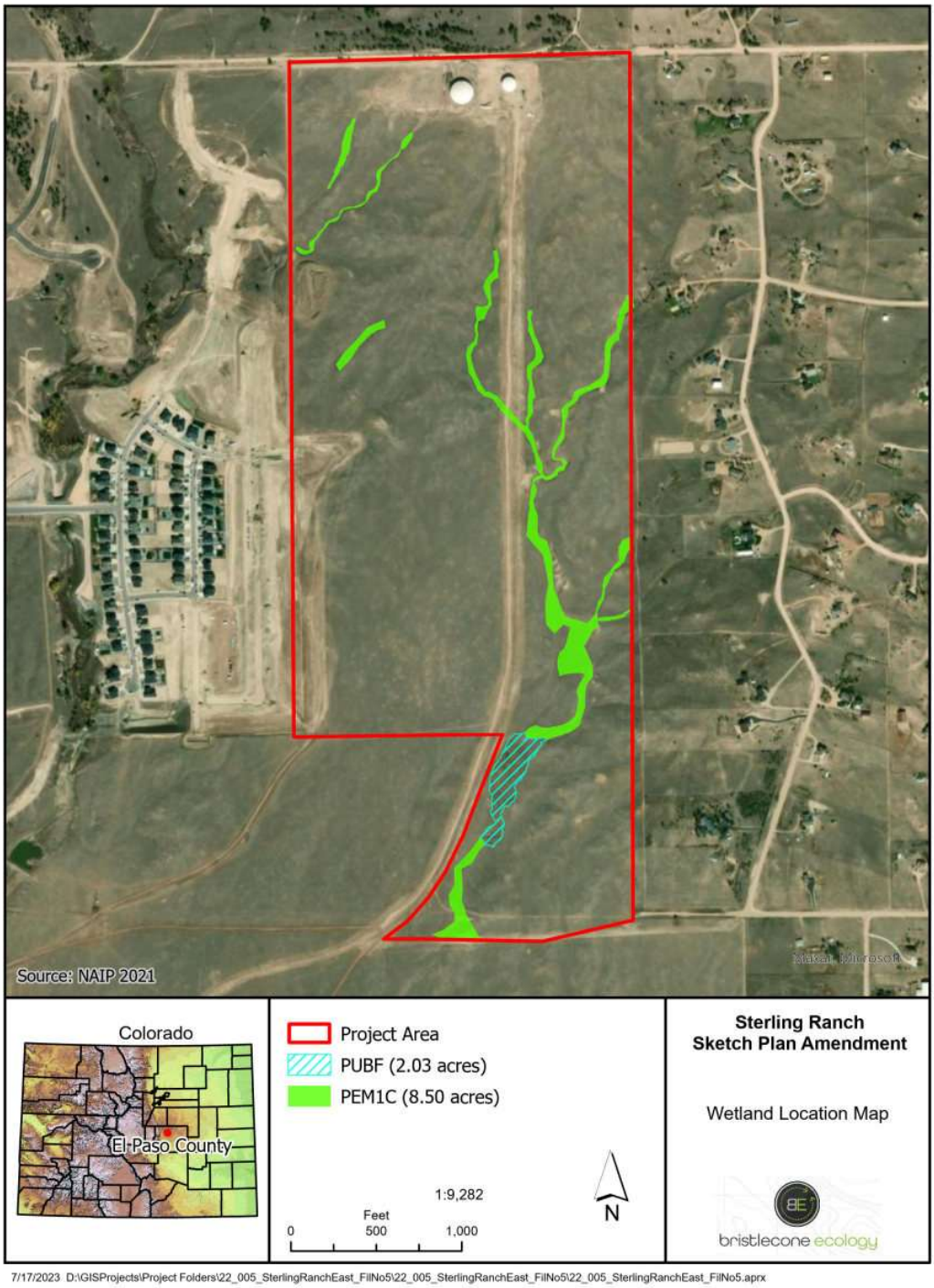


Figure 4: Wetland Location Map



3.4. Noxious Weeds

B.E. prepared a Noxious Week Management Plan ("Plan") as a standalone document based on EPC requirements for noxious weed control. The Plan is a Project-specific document that has been designed to set forth Project-level regulations to prevent and control the spread of noxious weeds within the Project area and vicinity. Noxious weeds are defined as those non-native plants that aggressively invade and are detrimental to native vegetation communities and ecosystems. The *Colorado State Noxious Weed Act* (Colorado Revised Statute 35-5.5-103) developed a list of plants considered noxious in the state of Colorado that should be targeted for control by various methods dependent on list category (A, B, or C). The Plan prepared by B.E. tiers to the requirements set forth by the El Paso County Noxious Weed Management Plan (EPC 2017), and the El Paso County Noxious Weeds and Control Methods report (EPC 2018a), which contain guidelines for the control and treatment of noxious weeds found in the County. EPC requires that residential, commercial or industrial projects that include ground disturbing activities submit a project-specific noxious weed management plan. This Plan provides methods to prevent and control the spread of noxious weeds at construction and post-construction phases of the Project. See **Appendix B**: *Sterling Ranch Sketch Plan Amendment – Noxious Weed Management Plan*.

3.5. Wildfire Hazard

In the 2018 El Paso County Development Standards, the stated purpose and intent for fire protection and wildfire mitigation is to ensure that proposed development is reviewed for wildfire risks and adequate fire protection (EPC 2018b). No permit or approval associated with development, construction, or occupancy shall be approved or issued until the provisions of these standards are satisfied. The Project area is located within the Black Forest Fire Protection District (FPD). There are two staffed fire stations in the district servicing the Project area:

- Station 1, 11445 Teachout Road, Colorado Springs (3.46 miles from the northern site entrance on Arroya Road)
- Station 2, 16465 Ridge Run Drive, Colorado Springs (8.88 miles from the northern site entrance on Arroya Road)

The Black Forest FPD has the following operations equipment available:

Station 1:

- 3 fire engines
    - Type 1 Engine, 750 gallons
    - Brush truck (Type 6)
    - Tender (1,800 gallons)
- 1 ambulance
- 1 Wildland truck, Type 3
- 1 reserve Tender
- 1 reserve brush truck
- Command vehicles

Station 2:

- 1 fire engine (Type 1, 500 gallons)
- 1 brush truck (Type 6)
- 1 reserve ambulance

Wildfire hazard for the Project site was evaluated using the Colorado State Forest Service's (CSFS) online Wildfire Risk Assessment Portal (WRAP; CSFS 2020). WRAP allows professionals, planners, and the public to access the best scientific information regarding wildfire risk and establish prevention and mitigation measures accordingly. According to WRAP, the wildfire risk for the Project site is approximately 85% "High Risk" and approximately 15% "Moderate Risk", (CSFS 2020; **Figure 5:** *Wildfire Hazard Map – Wildfire Risk*). "Wildfire Risk" is determined by CSFS by combining the burn probability rating of a site with the values-at-risk rating. While the Project site has a low to very low rating of values and assets that would be adversely impacted by wildfire, the burn probability for the entire site is rated entirely as level 7, with level 6 being "Moderately High" and level 8 being "High" (CSFS 2020; **Figure 6**: *Wildfire Hazard Map – Burn Probability*).

3.6. Flood Hazard

Flood hazard maps from the Federal Emergency Management Agency (FEMA) were reviewed to determine the potential for flood hazard at the site. The entirety of the site where development is planned is not located in a flood hazard zone, indicating that flood risk for the entire site is deemed by FEMA to be 'minimal' (**Figure 7:** *Flood Hazard Map*).

Figure 5: Wildfire Hazard Map – Wildfire Risk

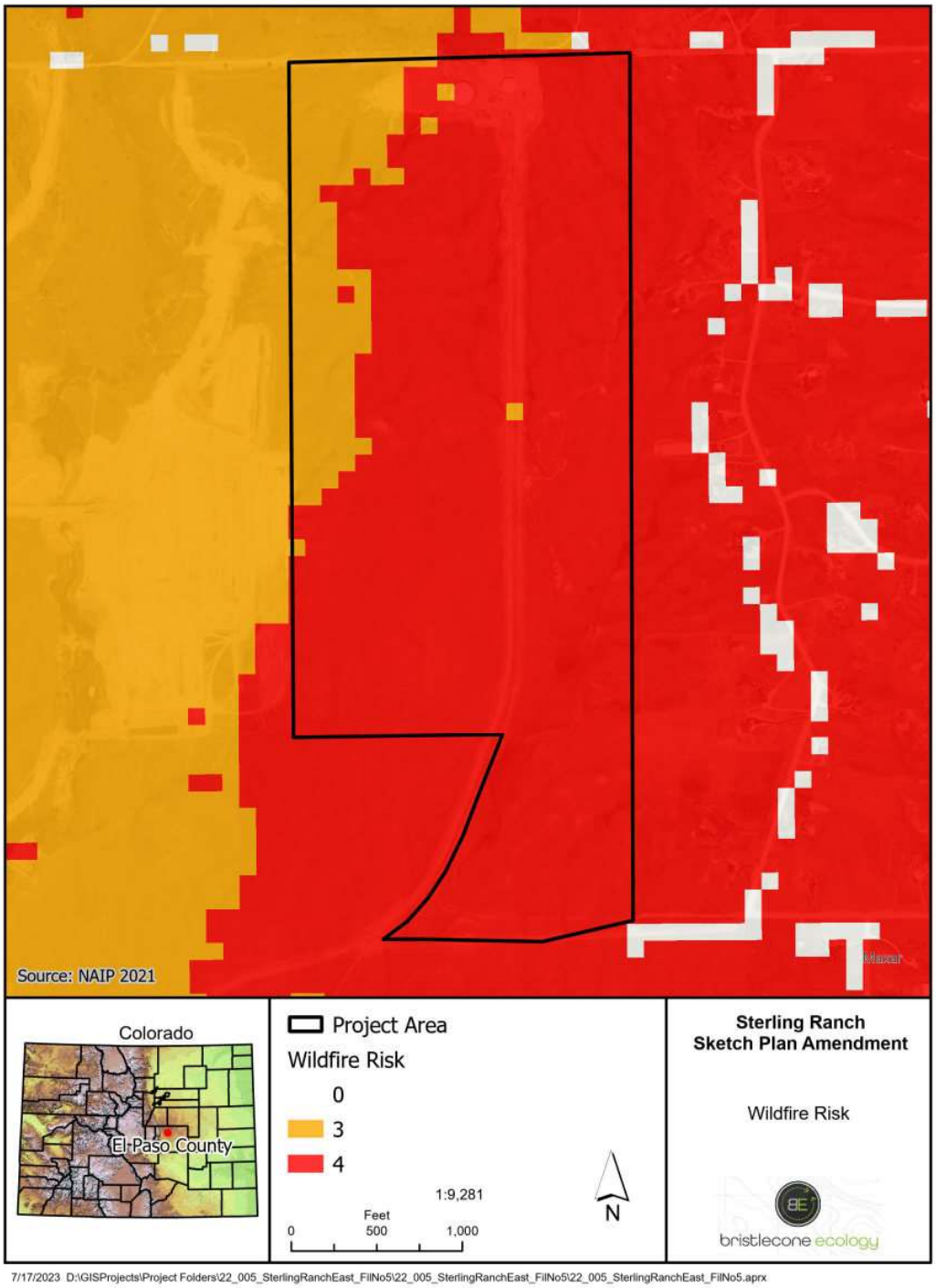


Figure 6: Wildfire Hazard Map – Burn Probability

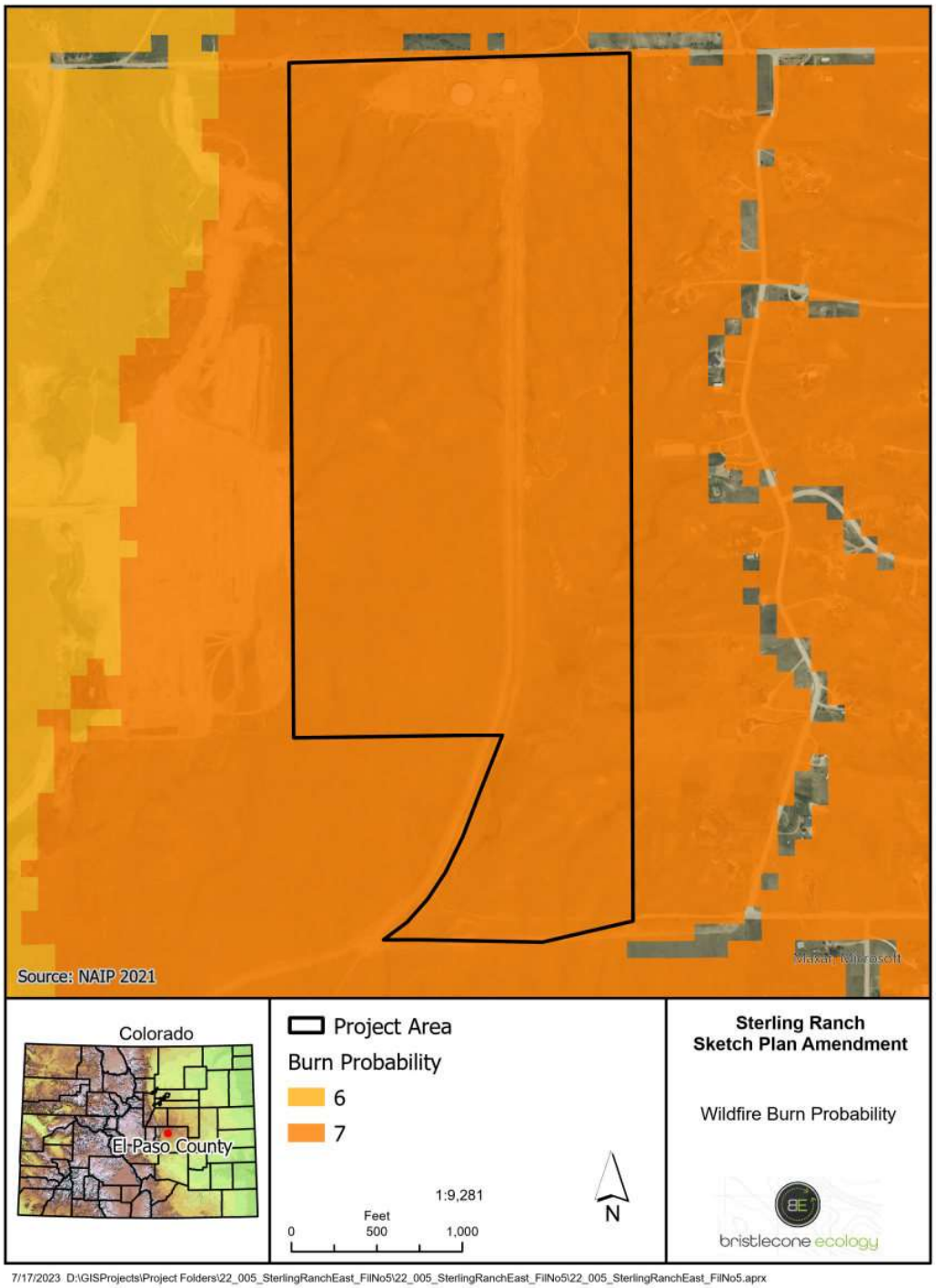
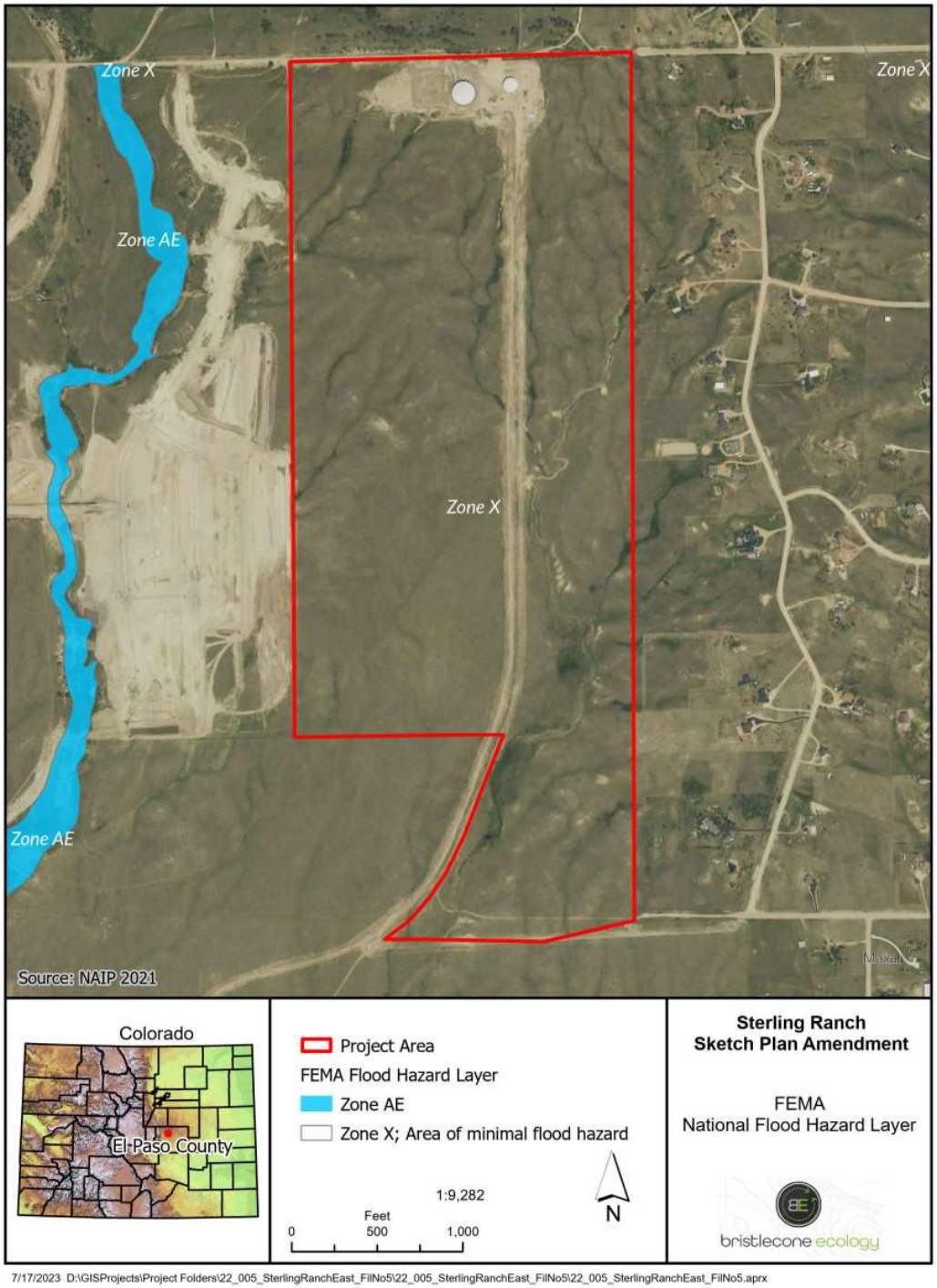


Figure 7: Flood Hazard Map



3.7. Wildlife Communities

The Project site provides moderate quality habitat for some grassland and woodland wildlife, including birds, mammals, reptiles, and amphibians. Development of the site would inevitably affect some habitat for wildlife, but based on the findings of the site reconnaissance, B.E. classified the expected impacts on grassland species as moderate to low, on woodland species as negligible, and on reptiles and amphibians as moderate to low. Wildlife that could be affected were identified first by referencing CPW's Species Activity Mapping (SAM) spatial data to assess the likelihood of occurrence for state T&E species, state species of concern (SC), and other general wildlife, including big game species. The Colorado Natural Heritage Program (2022) also provides species status data from tracked natural animal and plant communities in the state. The review indicated that there is potential for the occurrence of 16 mammals, 15 birds, and 14 reptiles, including one SC mammal, one state and federally threatened mammal, one state threatened bird, and one federally protected bird (**Table 2:** *SAM Wildlife Potential for Occurrence*).

Table 2. SAM Wildlife Potential for Occurrence (CPW 2022; CNHP 2022)

Common Name	Scientific Name	Type of Occurrence (CPW 2022)	Status[1,2]
Mammals			
Big brown bat	*Eptesicus fuscus*	Overall range	n/a
Black bear	*Ursus americanus*	Overall range Human conflict area	n/a
Black-tailed prairie dog	*Cynomys ludovicianus*	Overall range Potential colony occurrence	SC, S3
Dwarf shrew	*Sorex nanus*	Overall range	G4, S2
Fringed bat	*Myotis thysanodes*	Overall range	G4, S3
Hoary bat	*Lasiurus cinereus*	Overall range	n/a
Little brown myotis	*Myotis lucifugus*	Overall range	n/a
Mountain lion	*Puma concolor*	Overall range Human Conflict Area	n/a
Mule deer	*Odocoileus hemionus*	Overall range	n/a
Olive-backed pocket mouse	*Perognathus fasciatus*	Overall range	G5, S3
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	Overall range	FT, ST, S1
Pronghorn	*Antilocapra americana*	Overall range and Resident population area	n/a
Silver-haired bat	*Lasionycteris noctivagans*	Overall range	n/a
Western red bat	*Lasiurus blossevillii*	Overall range	n/a
White-tailed deer	*Odocoileus virginianus*	Overall range	n/a
White-tailed jackrabbit	*Lepus townsendii*	Overall range	n/a

[1]FT=Federally Threatened; ST=State Threatened; SC=State Species of Concern; BGEPA=Bald and Golden Eagle Protection Act

[2]State (S) or Global (G) CNHP Status: 1=Critically Imperiled; 2=Imperiled; 3=Vulnerable; 4=Apparently Secure, but Cause for Long Term Concern; 5=Demonstrably Secure; B=Breeding; N=Non-breeding

Table 2. SAM Wildlife Potential for Occurrence, Continued (CPW 2022; CNHP 2022)

Common Name	Scientific Name	Type of Occurrence (CPW 2022)	Status[1,2]
Birds			
Band-tailed pigeon	*Patagioenas fasciata*	Breeding range	S4B
Brewer's sparrow	*Spizella breweri*	Breeding range	S4B
Burrowing owl	*Athene cunicularia*	Breeding range	ST
Cassin's sparrow	*Peucaea cassinii*	Breeding range	n/a
Golden eagle	*Aquila chrysaetos*	Breeding range	BGEPA, S3S4B
Grasshopper sparrow	*Ammodramus savannarum*	Breeding range	S3S4B
Lark bunting	*Calamospiza melanocorys*	Breeding range	S4
Lazuli bunting	*Passerina amoena*	Breeding range	S5B
Lesser sandhill crane	*Antigone canadensis* ssp. *canadensis*	Overall range	n/a
Lewis' Woodpecker	*Melanerpes lewis*	Breeding range	G4, S4
Northern harrier	*Circus hudsonius*	Breeding range	S3B
Prairie falcon	*Falco mexicanus*	Breeding range	S4B, S4N
Rufous hummingbird	*Selasphorus rufus*	Migration range	n/a
Swainson's hawk	*Buteo swainsoni*	Breeding range	S5B
Virginia's warbler	*Oreothlypis virginiae*	Breeding range	S5
Reptiles and Amphibians			
Bullsnake	*Pituophis catenifer sayi*	Overall range	n/a
Common Lesser Earless Lizard	*Holbrookia maculata*	Overall range	n/a
Hernandez short-horned lizard	*Phrynosoma hernadesi*	Overall range	n/a
Milksnake	*Lampropeltis elapsoides*	Overall range	n/a
Many-lined skink	*Plestiodon multivirgatus*	Overall range	n/a
Ornate box turtle	*Terrapene ornata ornata*	Overall range	n/a
Painted turtle	*Chrysemys picta*	Overall range	n/a
Plains garter snake	*Thamnophis radix*	Overall range	n/a
Prairie lizard	*Sceloporus consobrinus*	Overall range	n/a
Plateau fence lizard	*Sceloporus tristichus*	Overall range	n/a
Prairie rattlesnake	*Crotalus viridis*	Overall range	n/a
Six-lined Racerunner	*Aspidoscelis sexlineata*	Overall range	n/a
Smooth greensnake	*Opheodrys vernalis*	Overall range	n/a
Terrestrial gartersnake	*Thamnophis elegance*	Overall range	n/a

[1]FT=Federally Threatened; ST=State Threatened; SC=State Species of Concern; BGEPA=Bald and Golden Eagle Protection Act

[2]State (S) or Global (G) CNHP Status: 1=Critically Imperiled; 2=Imperiled; 3=Vulnerable; 4=Apparently Secure, but Cause for Long Term Concern; 5=Demonstrably Secure; B=Breeding; N=Non-breeding

Following the review of the SAM data, a site reconnaissance was performed to field-verify the information provided in the data and perform a general wildlife survey. In general, the site provides moderate quality habitat for wildlife. The site is dominated by one primary vegetation community, represented by typical Foothill Grasslands vegetation such as smooth brome, slender wheatgrass, and needle-and-thread grass. Riparian and wetland vegetation includes Baltic rush, Dudley's rush, Nebraska sedge, and foxtail barley. Some portions of the site have been previously disturbed by construction activities, and cattle are actively being grazed on the remainder of the grasslands. Invasive weeds such as diffuse knapweed, Scotch thistle, downy brome, and great mullein are spread throughout the site in relatively moderate numbers, with concentrations near disturbed areas. All vegetation communities present on the Site provide marginal to moderate habitat for wildlife.

In terms of sensitive species, some of the species listed in the SAM data likely occur on the site, though few were observed, and the majority are either not expected to occur, or may occur only rarely based on the limited habitat available. The only species in the SAM data that were observed were pronghorn (*Antilocapra americana*), Swainson's hawk (*Buteo swainsoni*), and black-tailed prairie dog (*Cynomys ludovicianus*), while others such as big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*), grasshopper sparrow (*Ammodramus savannarum*), lark bunting (*Calamospiza melanocorys*), common lesser earless lizard (*Holbrookia maculata*), plains garter snake (*Thamnophis radix*), prairie lizard (*Sceloporus consobrinus*), and plateau fence lizard (*Sceloporus tristichus*) are species in the SAM data that could reasonably be expected to occur on-site in the appropriate seasons and in the appropriate habitats.

The state-listed black-tailed prairie dog was observed during the site reconnaissance. An 11.17-acre colony was mapped during the July 7, 2023, site visit (**Figure 8:** *Black-Tailed Prairie Dog Occurrence at the Site*). The site is thus also suitable for the state-threatened burrowing owl (*Athene cunicularia*), which uses abandoned prairie dog burrows for nesting. A survey for burrowing owls may be necessary to confirm they are not inhabiting the prairie dog colony. Other state-listed and state sensitive species were not observed. Of note, the Site is located within the Colorado Springs Block Clearance Zone for the state-listed Preble's meadow jumping mouse (*Zapus hudsonius preblei*), meaning the presence of this species is precluded. Golden eagles (*Aquila chrysaetos*), which nest mostly on cliffs in mountainous areas, and bald eagles (*Haliaeetus leucocephalus*), which are almost always found near large bodies of water or rivers, both receive federal protections under the Bald and Golden Eagle Protection Act (BGEPA). Both eagles are unlikely to occur except accidentally, as the site lacks suitable habitats.

The Site and its immediate vicinity provide little potential nesting habitat for raptors as there are no trees on the site itself, and poor habitat for Northern harrier, which nests on the ground in dense, midstory grasslands. The riparian corridor of Sand Creek to the west provides sufficient substrate for tree-nesting raptors such as Swainson's hawk, red-tailed hawk, and the cavity-nesting American kestrel (*Falco sparverius*); these species may utilize the site for hunting, but nesting habitat is not present.

The Project area also provides habitat for mammals including rodents, deer, and carnivores. Other than four pronghorns and the prairie dogs present at the colony, mammals were not observed during the site reconnaissance, but a few other species may be expected to occur, including coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), and/or red fox (*Vulpes vulpes*). The area is suitable year-round range for mule deer throughout the site, and perhaps white-tailed deer (*Odocoileus virginianus*) along Sand Creek to the west. The site also has the potential to provide foraging and breeding habitat for predators such as coyote, red fox, and potentially black bear (*Ursus americanus*); it is also listed as a potential human conflict area for mountain lion (*Puma concolor*), though this species is unlikely to occur.

Amphibians were observed in the ponded areas within the marsh. Several tadpoles of up to two unknown species were observed during the site visit. Chorus frogs (*Pseudacris* spp.) are the most likely species of amphibian to be present, though plains leopard frogs (*Lithobates blairi*) or Northern leopard frogs (*L. pipiens*) could also occur. One adult Woodhouse's toad (*Anaxyrus woodhousi*) was seen during the survey as well. Though not listed in the SAM data, Plains and Northern leopard frogs are listed as S2 (State Imperiled) and S1 (State Critically Imperiled) by CNHP (2022).

3.8. Federally Listed T&E Species

The USFWS IPaC database (USFWS 2021) was used to determine the likelihood of occurrence of federally listed T&E species within the Project area. The IPaC query listed seven species, including two birds, two fishes, one insect, and one flowering plant with the potential to occur within or be affected by activities in the Project Area (**Table 3:** *Federally Listed T&E Species Potentially Impacted by the Project*). B.E. has provided our professional opinion regarding the probability of occurrence at the Project site and their probability of being impacted by Project development. Preble's meadow jumping mouse, a state and federally threatened species, was not included in the IPaC species list and is excluded because the site is within the Preble's Block Clearance Zone for Colorado Springs (**Appendix C:** *Preble's Meadow Jumping Mouse Block Clearance Map*).

Figure 8: Black-tailed Prairie Dog Occurrence on the Site

Table 3. Federally Listed T&E Species Potentially Impacted by the Project (USFWS 2022)

Common Name	Scientific Name	Habitat Requirements and Likelihood of Impacts	Federal Status[1]
Birds			
Piping plover	*Charadrius melodus*	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. **Likelihood of impacts: Likelihood of impacts: None, Project is not within the watersheds listed.**	FT
Eastern black rail	*Laterallus jamaicensis* ssp. *jamaicensis*	Eastern black rail is a subspecies of black rail that occurs east of the Rocky Mountains in North America. Black rails are small, cryptic marsh/wetland specialists, and depend entirely upon these habitats to support their resource needs. Requires dense overhead cover (usually cattails [*Typha* spp.] or bulrushes [*Schoenoplectus / Scirpus* spp.]) and moist to saturated soils. Eastern black rails have been expanding their range in Colorado. **Likelihood of impacts: None, suitable habitat not available.**	FT
Insects			
Monarch butterfly	*Danaus plexippus*	Monarch butterflies require milkweeds (*Asclepias sp.*) as a host plant. Caterpillars consume the plant, and adults lay their eggs on milkweed. Monarch butterfly is a candidate species for listing under the ESA. The USFWS determined that listing the species was warranted but precluded by work on higher priority listing actions. The species will remain a candidate for listing and reviewed yearly. There are no requirements for candidate species, but due diligence is encouraged. **Likelihood of impacts: None, milkweed species are not present onsite.**	C
Fishes			
Greenback cutthroat trout	*Oncorhynchus clarkii stomias*	Cold, clear, gravely headwater streams and mountain lakes. Genetic sampling has confirmed that the only remaining native pure-strain population occurs in a 4-mile stretch outside of its native range in Bear Creek (Metcalf et al. 2012). Reintroduction efforts are ongoing in the S Platte River system. **Likelihood of impacts: None, habitat not present.**	FT
Pallid sturgeon	*Scaphirhynchus albus*	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. **Likelihood of impacts: None, Project is not within the watersheds listed.**	FE
Flowering Plants			
Ute ladies'-tresses orchid	*Spiranthes diluvialis*	Primarily occurs along seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels, and lakeshores. May also occur along irrigation canals, berms, levees, irrigated meadows, gravel pits, borrow pits, and other human-modified wetlands. There are no known populations in El Paso County, and the site is above the elevation (7,000 feet) where surveys are required (USFWS 1992). **Likelihood of impacts: None, habitat not present and the site is not in an area that requires surveys.**	FT

[1]FE= Federally Endangered; FT=Federally Threatened; C=Candidate for Listing

4.0 SUMMARY OF IMPACTS

4.1. Vegetation

Vegetation will be unavoidably disturbed through development of the Project site. The vast majority of the site is classified as Foothill Grasslands, which is the primary ecosystem type that will be impacted. The site is generally of moderate quality and impacts are not expected to imperil or substantially harm this ecosystem, though development of the site will result in the loss of around 209 acres of previously disturbed grasslands. No globally sensitive vegetation communities are present, and no state-sensitive vegetation communities are present according to CNHP data for sensitive vegetation communities and the site reconnaissance (CNHP 2022). The Project site is on the fringe of the Ponderosa Pine Woodlands, a globally and state stable vegetation community, but the site contains no pine trees and impacts are not expected. The site may have historically been primarily Shortgrass Prairie, a State Imperiled (S2) community, but the site is now classified as disturbed grassland, a common community. Development of the site will likely increase and improve arboreal habitat through the planting of trees in yards and in open spaces. There are wetland areas (presumed non-jurisdictional) present on the site that support wetland vegetation, which would be impacted by development and result in the loss of these wetlands. There are jurisdictional riparian and wetland areas along Sand Creek to the west, and these areas are high-quality habitats, but this corridor is not a part of the Project site.

4.2. Aquatic Resources

There are aquatic resources on the site, presumed to be non-jurisdictional due to their lack of surface water connection to Sand Creek to the west or any other downstream WOTUS. Wetlands mapped in NHD/NWI data were generally confirmed to be present in the locations shown in the datasets during the site reconnaissance, however they may or may not be jurisdictional. A formal wetland delineation was not performed and may be needed to determine the boundaries of aquatic resources on the site. In addition, an approved jurisdictional determination may be needed to confirm the regulatory status of the wetlands present. If these wetlands are determined to be jurisdictional, a Section 404 permit from the USACE would be required. Regardless of regulatory status, it is assumed that wetlands on the site would be impacted by development.

4.3. Noxious Weeds

Noxious weeds are present on the Project site in several areas but in generally limited quantities. There were some moderate concentrations of noxious weeds in disturbed areas, and scattered noxious weeds were found throughout various portions of the site, primarily where disturbance from construction has already occurred. List A Species, which require reporting and eradication by Colorado law (Colorado Department of Agriculture [CDA] 2006), were not detected. List B Species require either eradication, containment, or suppression; List C Species require control through either public education or chemical control. List B Species that were detected during the site reconnaissance included:

- Scotch thistle
- Diffuse knapweed

It is possible that additional noxious weed populations may be present on the site. A site inventory to identify and map noxious weeds during the growing season would be required to accurately catalogue all populations on the site. A Noxious Weed Management Plan has been prepared for the Project detailing recommendations for identifying and controlling the spread of noxious weeds prior to, during, and/or post-construction.

4.4. Wildfire

Roughly 85% of the Project area is mapped as "High" wildfire risk while the remaining 15% is mapped as "Moderate" risk. The moderate-risk areas of the site include the areas where the site has been previously disturbed, construction materials are stored, and a water tank exists. The majority of the site, with high wildfire risk, are the disturbed and undisturbed grasslands. The site is rated low in terms of values and assets present that could be lost to wildfire; it is rated between moderately high and high in terms of burn probability based on the available fuels at the site, nearly all of which are grasslands. The nearest fire response is Station 1 in the Black Forest FPD, which is located 3.46 miles from the site; the second closest station is Station 2 in the Black Forest FPD, which is 8.88 miles away.

Development of the site would result in a reduction of the available fuels for wildfires, while simultaneously increasing the values and assets present on the site. As such, the overall wildfire risk index for the Project is expected to be similar before and after development.

4.5. Wildlife

Similar to the impacts for vegetation, some wildlife will inevitably be affected by development of the Project area. Some species that prefer suburban habitats including some species of birds are expected to benefit from an increase in planted trees and bird feeders in yards. Designated open spaces will also conserve some of the open grassland habitats that are currently available, but open, undisturbed grasslands will be reduced on the whole. Implementation of a stormwater management plan will assist in protecting water quality in downstream reaches, which will provide additional benefits to aquatic species including invertebrates. Detention facilities may add seasonal water features that could support additional wildlife such as waterfowl and amphibians. Negligible impacts to forest species are expected as no trees will be cleared for construction. The amphibians observed in the marshy area will presumably all be lost when these ponds are removed. Since grasslands are the most dominant habitat type, grassland species are expected to experience the greatest adverse impacts. Deer, foxes, bears, raccoons, and skunks may experience adverse effects from the increase in urbanization in close proximity to wildland areas, such as the Black Forest. Few sensitive species were present and only in small numbers, and thus are not expected to be affected any more than other species. State sensitive black-tailed prairie dogs were present in a 11.17-acre colony and would be removed through development of the Site. State threatened burrowing owls may also be present at this colony; a burrowing owl survey would be necessary to confirm their presence/absence.

4.6. Federally Listed T&E Species

Federally listed T&E species are not expected to occur on the Project. All species listed in the IPaC report for the Site occur in habitats that were not present on the site or would only be affected if development were to involve water depletions that are known to affect downstream populations in different river systems. Preble's meadow jumping mouse habitat is not present on the site because the entire site is within the Colorado Springs Block Clearance Zone.

5.0 RECOMMENDATIONS

Upon completion of a desktop review, site reconnaissance, and preliminary wetland assessment, B.E. finds that some environmental constraints are present within the Project area. Constraints are summarized below within the regulatory context that they apply, and recommendations are provided.

5.1. Clean Water Act

Section 404 of the Clean Water Act prohibits the discharge of dredge or fill material into WOTUS (including wetlands) without a valid permit. Regulated wetland habitats, as well as jurisdictional WOTUS lacking wetlands, are presumed to be absent from the site, but an approved jurisdictional determination from the USACE would be necessary to determine if the aquatic resources observed on the site are considered jurisdictional. A formal wetland delineation was not performed, only a preliminary wetland assessment. A formal wetland delineation is recommended in order to accurately determine the boundaries of wetlands and would be required for an approved jurisdictional determination request.

5.2. Endangered Species Act

Section 9(a)(1) of the Endangered Species Act prohibits the take of federally listed species and their habitats, and defines such take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C. § 1531). There is no suitable habitat for listed species on the site. The site is within the Colorado Springs Block Clearance Zone for Preble's meadow jumping mouse. Other federally listed species are not present, or they would not be affected because the Project will not involve water depletions from the river basins where these species occur. No impacts to any federally listed species are anticipated from site development and no further due diligence or consultation is recommended.

5.3. Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

Migratory birds, and the parts, nests, or eggs of such a bird receive statutory protection under the Migratory Bird Treaty Act, which prohibits the intentional take of migratory birds. Bald eagles and golden eagles receive additional statutory protection from accidental take and disturbance under the BGEPA. Both acts particularly apply to nesting birds and their nests. There were no nests observed on the site, but some nesting substrates for raptors and other migratory birds are available west of the site along Sand Creek in the scattered trees. There are no trees large enough in the area around the Project site to be suitable nesting substrate for bald or golden eagles. Further nesting substrates for other migratory birds are present in the form of open grasslands which are expected to be used by some migratory birds during the nesting season.

It is recommended that vegetation clearing/grubbing of the site occur outside of the nesting season (March 15th to July 31st) to avoid disturbing nesting migratory birds. If such timing restrictions are not possible, B.E. recommends conducting a migratory bird nesting survey during the nesting season to ensure impacts to nesting birds do not occur. In particular, occupied raptor nests may be present along Sand Creek, and B.E. recommends following CPW's guidance for establishing buffer zones to protect nesting raptors from disturbance.

5.4. Colorado Noxious Weed Act

In order to ensure Project compliance with the Colorado Noxious Weed Act, and to comply with the requirements of El Paso County's Noxious Weed Management Plan, the Noxious Weed Management Plan referenced in Section 3.4 of this report should be implemented, and further site-specific weed management should be implemented on an ongoing basis. In particular, control of diffuse knapweed and Scotch thistle (and any other List B noxious weeds observed on the site) is required by Colorado law.

5.5. Non-Statutory Considerations

There is potential for general wildlife, including some big game, to occur within the site. However, no big game migratory routes traverse the Project, and only a few pronghorn have been observed.

In addition, ranges for several migratory birds, including the state-threatened burrowing owl, overlap the Project area, and habitat for burrowing owls is present based on the presence of black-tailed prairie dogs. A survey for burrowing owls is recommended.

Amphibians present in the ponded areas are likely to be affected by Project development. The amphibians present were tadpoles and could not be identified to species. These tadpoles may be leopard frogs (*Lithobates* spp.) which are state sensitive species. Surveys around the ponded areas following CPW's guidance for identifying leopard frogs and their habitats are recommended during the appropriate season.

B.E. recommends following guidance from CPW to determine the appropriate avoidance measures to take during and after construction regarding general wildlife. Impacts to wildlife should be reduced as much as practicable through the implementation of typical covenants, such as using bear-resistant trash containers and fencing that allows safe passage for game animals.

Should you have any questions regarding the information or recommendations provided in this report, please feel free to contact Bristlecone Ecology at dmaynard@bristleconeecology.com.

Sincerely,

Bristlecone Ecology, LLC

Daniel Maynard
Ecologist

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APPENDIX A

PHOTOGRAPHIC LOG

PHOTO 1 – Overview of typical habitat at the site, taken from the center of the site on the construction road, facing west. Where vegetation has not been previously disturbed, the area is dominated by needle-and-thread, blue grama, smooth brome, fringed sage, and other common grassland/prairie species. Overall, the grasslands on the site show moderate diversity and lack structure.

PHOTO 2 – View of the water tanks located at the northernmost edge of the site, facing southeast. Flora and fauna are sparse in the areas where construction vehicles and materials are stored, and construction activities are ongoing. Some noxious weeds are present near this area.

PHOTO 3 – Photo facing south of the construction road that runs through the center of the site. Upland areas are visible around this road, and an erosional feature can be seen on the right side of the photo.

PHOTO 4 – View facing east of the palustrine wetlands located east of the construction road. Wetland areas are located where the vegetation appears darker green, while upland vegetation is where vegetation appears lighter green. Invasive scotch thistle can be seen growing in a patch on the left center of the photo.

PHOTO 5 –View facing southwest of part of the marsh depicted in the NWI and NHD. The marsh supports dense wetland vegetation, and several amphibians were observed.

Photo 6- View facing northeast of palustrine wetland areas on the eastern side of the site. Wetland vegetation appears darker green, surrounded by upland vegetation that appears lighter green.

Photo 7- Outflow from the marsh area to the southernmost wetland on the site. Water can be seen flowing over the lip where green algae is growing below.

Photo 9- Photo facing south of the area where the three branches of the large wetland come together on the eastern side of the site. Surface water was present at the time of the survey. Wetland vegetation dominates the wettest areas, however the facultative upland (FACU) plant slender wheatgrass is also found along the edges of the wettest areas, indicating a wetter than normal year and an area where inundation (and wetlands) may be less extensive than suggested in this photo.

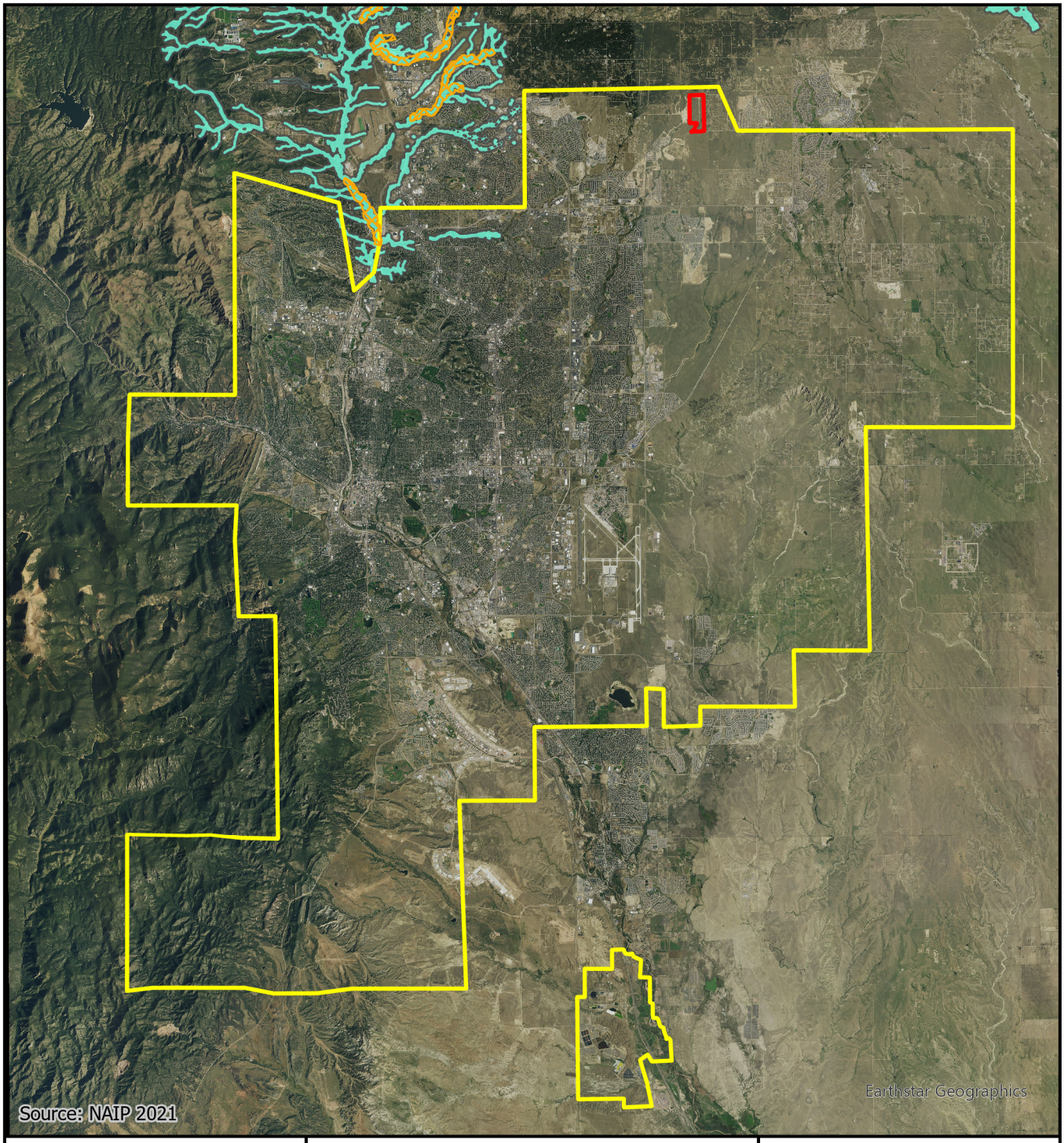
Photo 10- View facing south of the southernmost edge of the Project Area, where the southernmost wetland flows off the site. Ponding was prominent here at the time of the survey. The Project boundary can be seen demarcated with a fence running left to right through the image. Beyond the fence, the wetlands disappear as the topography shifts to flatter, grassy, upland areas.

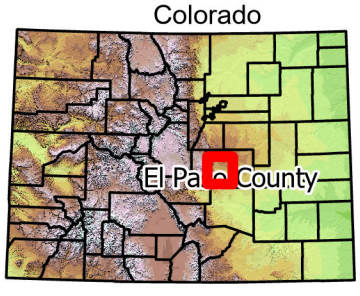
APPENDIX B

STERLING RANCH SKETCH PLAN AMENDMENT NOXIOUS WEED MANAGEMENT PLAN

APPENDIX C

PREBLE'S MEADOW JUMPING MOUSE BLOCK CLEARANCE MAP





Project Area
CPW Preble's Meadow Jumping Mouse Occupied Range
Block Clearance Zone
USFWS Critical Habitat

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Miles
0 2.5 5

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Sterling Ranch
Sketch Plan Amendment

Preble's Meadow
Jumping Mouse
Block Clearance Zone

bristlecone ecology

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