



NATURAL FEATURES AND WETLANDS REPORT

for

***Antler Range Development
El Paso County, CO***

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1.0 INTRODUCTION

Antler Range, LLC (“Applicant”) has retained Bristlecone Ecology, LLC (“B.E.” or “Agent”) to perform field assessments and prepare a Natural Features and Wetlands Report for the proposed Antler Range development (“Project”), located in unincorporated El Paso County (EPC), Colorado.

1.1. Purpose and Goals

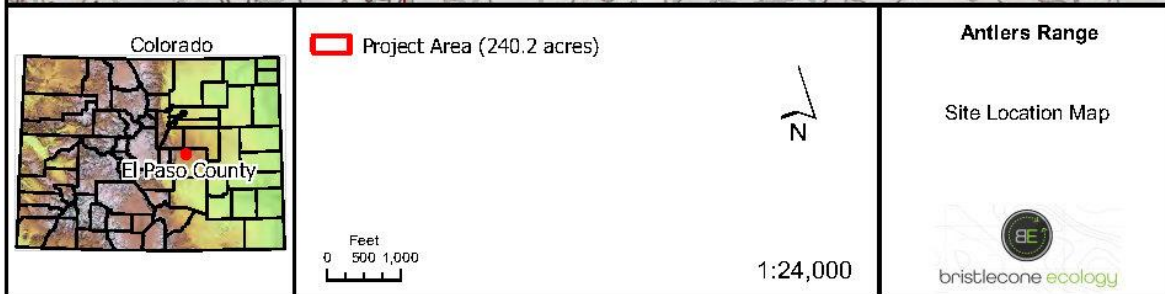
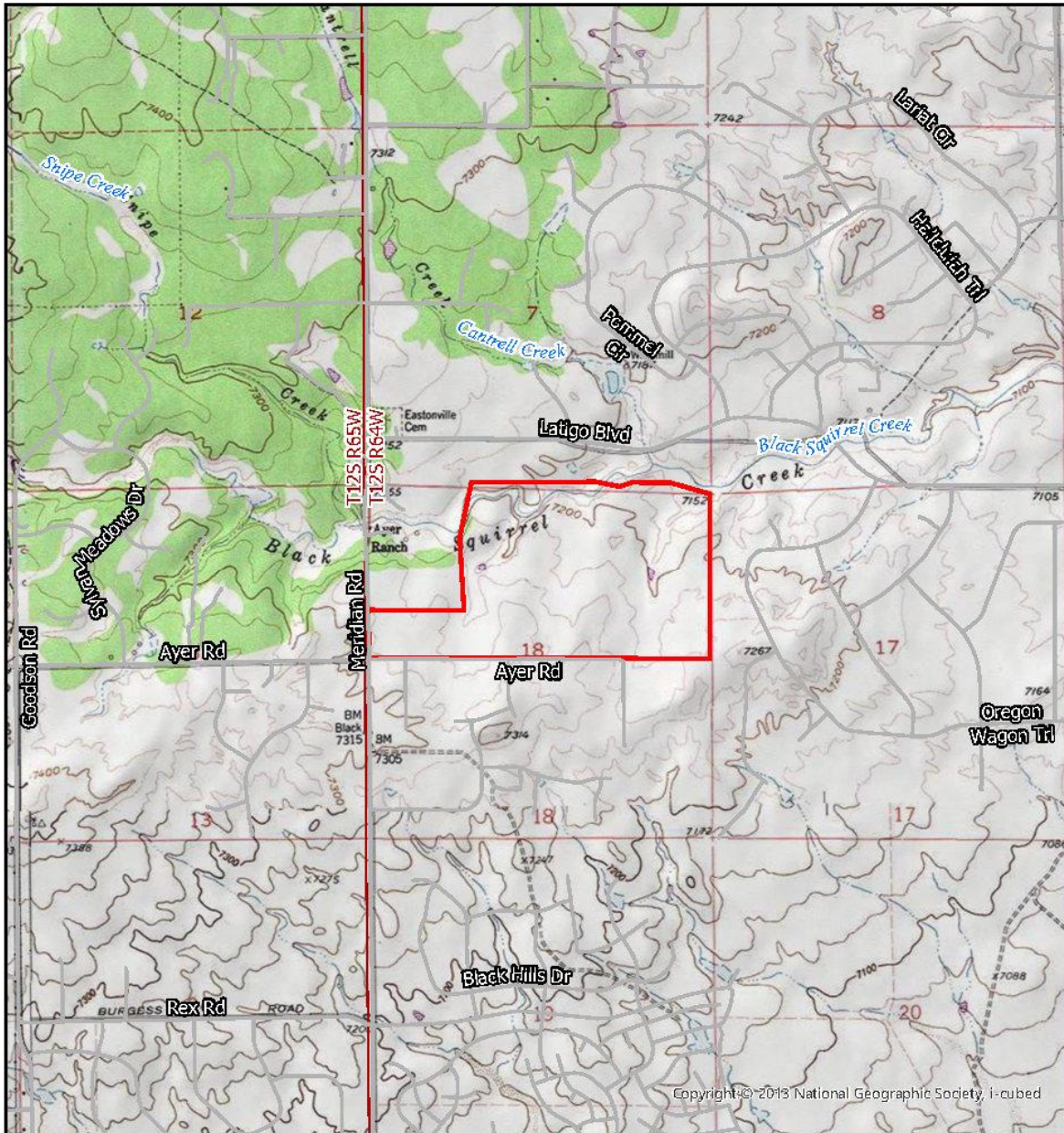
The purpose of this report is to document natural resources and existing site conditions in order to identify potential environmental constraints that may affect the development of the Project. In addition, a goal of this report is to provide guidance on regulatory issues that could influence site development in accordance with development planning and application submittals in EPC. EPC’s Land Development Code requires the preservation of natural landscapes and identification of potential environmental constraints, including:

- Vegetation, including riparian habitats
- Soil suitability
- Significant topographic features
- Aquatic resources, i.e., wetlands/Waters of the U.S. (WOTUS)
- Potential wildfire hazards
- Potential flood hazards
- Potential wildlife impacts
- Potential occurrence of federal and state-listed threatened and endangered (T&E) species

1.2. Project Description and Site Location

The Project will involve the development of residential properties on approximately 240 acres within a portion of EPC Parcel No. 4218000022 (**Figure 1: Site Location Map**). The Project site is located northeast of the intersection of Ayer Road and Meridian Road, approximately 7 miles north of the town of Falcon, Colorado. Black Squirrel Creek, an intermittent stream, flows along the northern border of the property. The topography of the Project consists of rolling foothills grasslands, bounded on all sides by varying densities of residential development (**Figure 1**). The Project will consist of up to 84 residential lots, open space tracts, stormwater detention facilities, local and arterial roads, utilities, and other associated infrastructure. The site is located within Section 18, Township 12 South, Range 64 West, and can be found on the U.S. Geological Survey’s (USGS) Eastonville NW 7.5-minute quadrangle (USGS 2024).

Figure 1: Site Location Map



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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's (USFWS) Information for Planning and Consultation (IPaC) data
- USFWS Critical Habitat Portal
- Species profiles and spatial data from Colorado Parks and Wildlife (CPW)
- USGS topographic maps
- 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 January 15th, 2025, to field-verify results of the review and identify potential impacts to resources and constraints to development. The field reconnaissance focused on identifying significant topographic and geologic features, on classifying vegetation communities on the site, and on identifying suitable wildlife habitat, particularly that which could support T&E and sensitive species. Photographs of the site visit can be seen in **Appendix A: Photographic Log**.

3.0 ENVIRONMENTAL SETTING

The Project area is located within the Foothill Grasslands Level IV ecoregion in Colorado (Chapman *et al.* 2006). The Foothill Grasslands Ecoregion is composed of a mixture of mid- and shortgrass prairies, with isolated tallgrass prairie species and scattered pine woodlands (Chapman *et al.* 2006). Typical plant species within the Foothill Grasslands include ponderosa pine (*Pinus ponderosa*), mountain mahogany (*Cercocarpus montanus*), Gambel oak (*Quercus gambelii*), chokecherry (*Prunus virginiana*), western serviceberry (*Amelanchier alnifolia*), little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), needle-and-thread (*Hesperostipa comata*), slender wheatgrass (*Elymus trachycaulus*), and galleta grass (*Pleuraphis jamesii*), among others (Chapman *et al.* 2006). The topography of the Project consists mainly of gently rolling grasslands and scattered pine forests. The site is surrounded by scattered rural residential development. The pine-oak woodlands of the Black Forest are just north of the site, while the site itself is dominated by grasslands with a few coniferous woodland fingers.

Elevations of the Project site range between approximately 7,160 and 7,290 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.

1.3. Vegetation

An array of native and nonnative plants were observed during the site assessment. Dominant species included blue grama (*Bouteloua gracilis*), mountain muhly (*Muhlenbergia montana*), ponderosa pine, little bluestem, and buffalograss (*Bouteloua dactyloides*) in the uplands, and Nebraska sedge (*Carex nebrascensis*), Baltic rush (*Juncus balticus*) and sandbar willow (*Salix exigua*) in the creek channel. Other common upland plant species observed were fringed sage (*Artemisia frigida*), tenpetal blazingstar (*Mentzelia decapitata*), Thurber's fescue (*Festuca thurberi*), soapweed yucca (*Yucca glauca*), Wood's rose (*Rosa woodsii*), yarrow (*Achillea millefolium*), prickly Russian thistle (*Kali tragus*), yellow indiagrass (*Sorghastrum nutans*), horseweed (*Erigeron canadensis*), Canada wildrye (*Elymus canadensis*), smooth brome (*Bromus inermis*), squirreltail (*Elymus elymoides*), and hairy false goldenaster (*Heterotheca villosa*).

Within the Project site, wetland vegetation is primarily associated with Black Squirrel Creek, which appeared to contain high-quality wetlands based on the wintertime assessment. The creek featured a broad floodplain, braided channels, and minimal erosion, creating favorable conditions for a diverse and robust wetland plant community. In-channel vegetation included sandbar willows, plains cottonwoods (*Populus deltoides*), speckled alders (*Alnus incana*), and the occasional peachleaf willow (*Salix amygdaloides*) along the banks, with an understory of hydrophytic species such as rushes, sedges, and cattails including Nebraska sedge, Baltic rush, duckweed (*Lemna* sp.), common rush (*Juncus effusus*), broadleaf cattail (*Typha latifolia*), and fireweed (*Chamaenerion angustifolium*). The western swale, which may act as a small tributary to Black Squirrel Creek, also supported Nebraska sedge and Baltic rush, conveying irregular flows from precipitation events and snowmelt to the larger system.

The upland portions of the site were relatively intact, disturbed only moderately by ongoing cattle grazing. Diversity was moderate for this ecoregion, and the structure of vegetation in the uplands was somewhat underdeveloped, likely owing to grazing. Overall, the site was a healthy foothill grassland system with only minor disturbance.

A few varieties of noxious weeds were present at the site, mostly scattered throughout the property in low densities. Noxious weed species observed included common mullein (*Verbascum thapsus*), Canada thistle (*Cirsium arvense*), and diffuse knapweed (*Centaurea diffusa*). The most prominent noxious weed species observed was common mullein, a List C noxious weed in El Paso County. Noxious weeds are discussed further in **Section 3.4**.

B.E. reviewed CNHP data for the Eastonville NW 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, and 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: Potentially Impacted Rare Vegetation Communities**.

Table 1. Potentially Impacted Rare Vegetation Communities (CNHP 2022)

| Plant Community (Type) | Status ¹ | Presence and Location | Probability of Impacts |
|--|---------------------|--|---|
| <i>Andropogon gerardii</i> - <i>Sporobolus heterolepis</i> – 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 in eastern Colorado, western Oklahoma, and possibly elsewhere. | None. Community is not present in the Project area. Neither big bluestem nor dropseed were present at the site. |
| <i>Salix amygdaloides</i> / Riparian Woodland – Peachleaf Willow Alliance | G3, S1 | Riparian habitats found in montane and subalpine elevations of the Rocky Mountains, dominated by trees and tall arborescent shrubs. | Unlikely. A few peachleaf willows were present but were not the dominant vegetation type (nor even the dominant willow type). |
| <i>Pinus ponderosa</i> / <i>Carex inops</i> ssp. <i>heliophila</i> Woodland – Foothills Ponderosa Pine Savannas | G3, S1 | Mesic savanna habitats found in foothills along the Rocky Mountains dominated by bunchgrasses, sedges, and rocky outcroppings. | Possible but unlikely. Ponderosa pines were observed in about 15-20% of the Project Area. Sun sedge could also occur in the understory but were not observed. |
| <i>Schizachyrium scoparium</i> / <i>Bouteloua curtipendula</i> – Western Great Plains/ Grassland Great Plains Mixed Grass Prairies | G3, S1 | Dry upland sites, prairies, and pine stands east of the Rocky Mountains, primarily found in the Great Plains. | Unlikely. Little bluestem was observed within the Project Area, but sideoats gramma did not appear to co-occur. |

¹G = Global; S = State 1 = Critically Imperiled; 2 = Imperiled; 3 = Rare or Uncommon; 4 = Widespread, Abundant, and Apparently Secure; 5 = Demonstrably Widespread, Abundant, and Secure; NR = Not Ranked

1.4. Soils

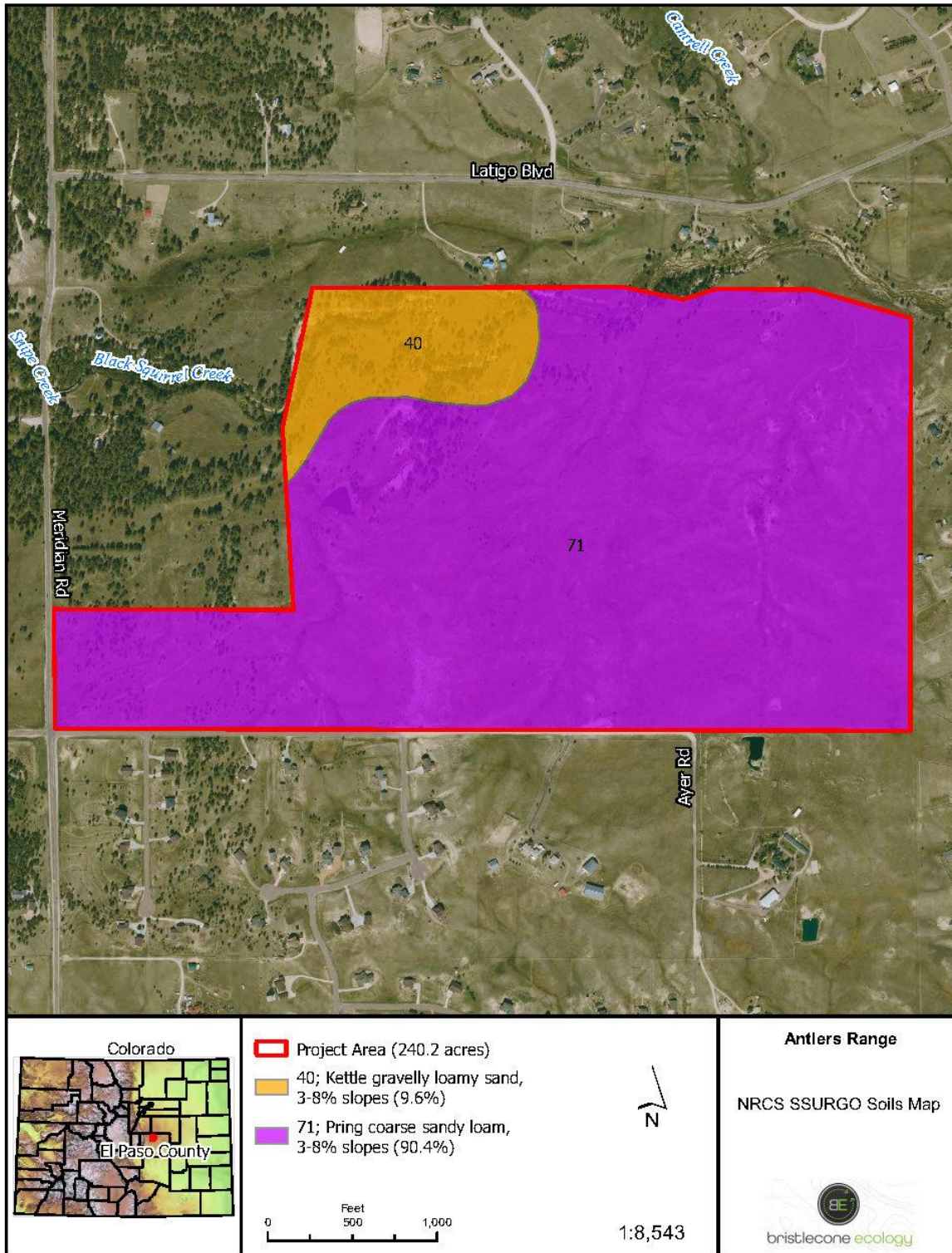
Soil survey data and reports were reviewed to determine the potential for the presence of geologic hazards within the Project (NRCS 2022a). County soil survey data indicate that 90.4% of the site is composed of Pring coarse sandy loam (3 to 8 percent slopes), and 9.6% of the site is composed of Kettle gravelly loamy sand (3 to 8 percent slopes) (NRCS 2022a) (**Figure 2: NRCS SSURGO Soils Data**). There may also be minor components (“inclusions”) within a soil series that could contribute to the overall soil composition at the site.

The NRCS provides information on soil properties that could 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, however 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 entire site is rated ‘Somewhat Limited’ (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 soil types present are described as having a low hydric to nonhydric rating in EPC, with the Pring soil series having a hydric rating of 5, and the Kettle soil series having a hydric rating of 3 (NRCS 2022a). Both soil types present are described as having a low hydric to nonhydric rating in EPC (NRCS 2022a). 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 potential minor component of both primary soil 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 to be found on the site in swales, depressions, and minor drainages; in these areas where the Pleasant component is present, the site is more suitable for the development of hydric soils. The overall suitability of the site for the development of hydric soils, and thus the presence of wetlands, is low where the Pring and Kettle series predominate on hills/ridges and uplands, and moderate in the swales and drainages on the site.

The Pring soil series is grouped into Hydrologic Group B, while the Kettle series is grouped into Group A (NRCS 2022d). The ‘B’ grouping includes soils that have a moderate infiltration rate, which results in the soil having a corresponding moderate rate of surface and ground water transmission. Hydrologic Group A has a high infiltration rate, and a corresponding low potential for runoff and ponding. 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 Data



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1.5. Significant Topography and Natural Landforms

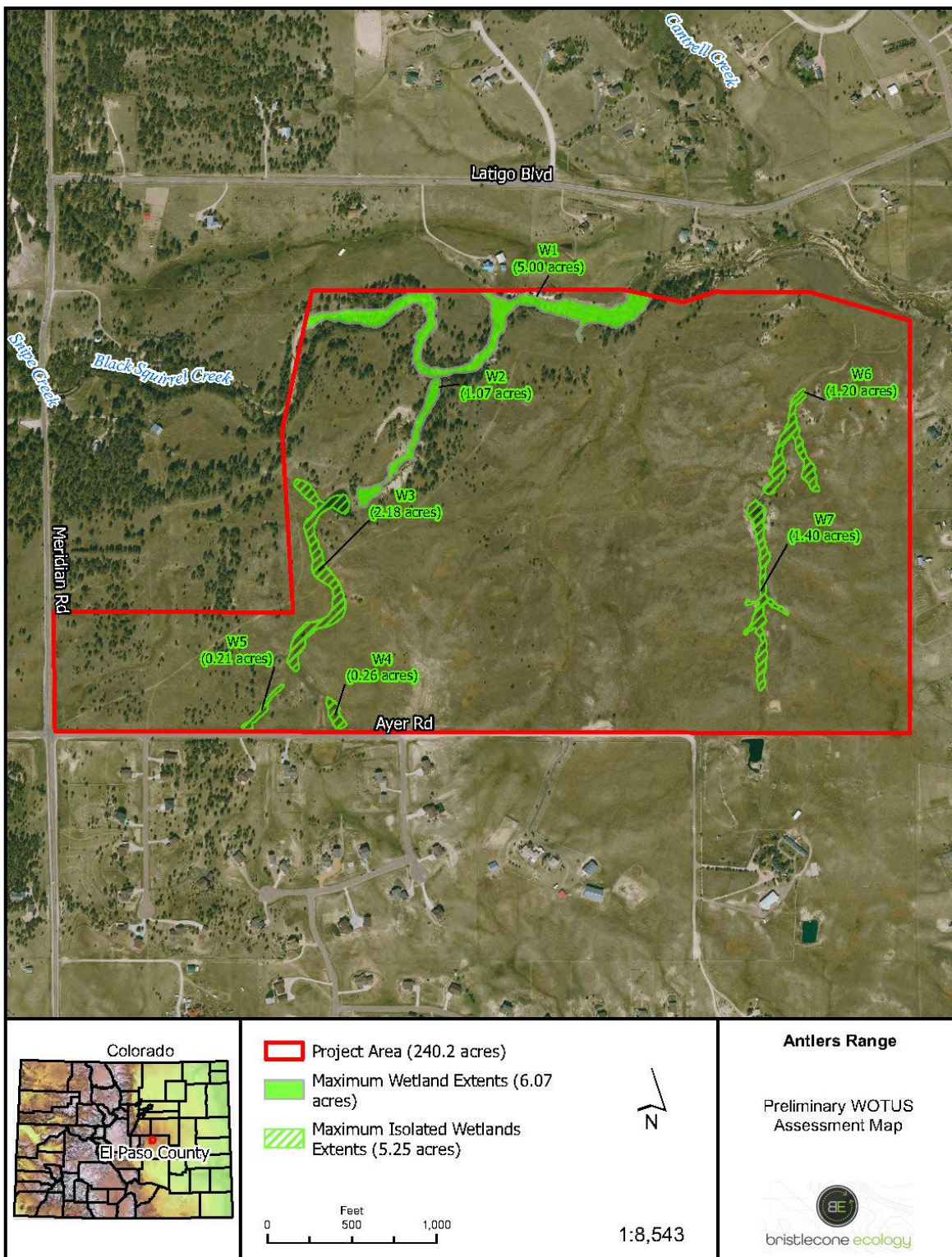
The topography of the site is characterized by three distinct swales typical of foothill plains formation, flowing northward toward Black Squirrel Creek, which are the most significant natural features at the site. Black Squirrel Creek is highly sinuous, flowing generally west to east through a small portion of the site along the northern boundary. The three swales on the site are far less significant. The eastern and western swales were historically dammed by manmade berms for the purpose of creating stock ponds. The western swale is the most developed, primarily below the impoundment where it maintains direct connectivity to Black Squirrel Creek after descending through a forested gully. Over time, the berm at the eastern swale was breached, resulting in steep cut banks and a smaller ponded area. The eastern swale, while still present, is more ephemeral and disappears entirely before connecting to Black Squirrel Creek. The central swale is the faintest of the three, with a maximum depth of approximately three feet, and is unobvious in photos without specific identification (see **Appendix A**). These swales contribute to the site's overall drainage pattern, channeling runoff toward Black Squirrel Creek and shaping localized hydrology.

Besides Black Squirrel Creek and the three minor swales, there were few other natural landforms or significant topography on the site. A few pine forests, mainly along Black Squirrel Creek and the lower part of the westernmost tributary, were generally not dense like the majority of Black Forest to the west and north. There were no rock outcroppings, cliffs, or other significant geologic features on the site.

1.6. Aquatic Resources

Aquatic resources include jurisdictional wetlands and other regulated 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. A desktop review and preliminary field evaluation of wetlands and WOTUS was conducted on January 15th, 2025. The survey identified potential wetlands in both Black Squirrel Creek and within the western swale, which was identified as a tributary of Black Squirrel Creek; additional isolated wetlands were mapped in the eastern tributary (**Figure 3: Preliminary WOTUS Assessment Map**). Black Squirrel Creek supported healthy wetlands with robust structure and diversity throughout its floodplain. In the western and eastern swales, wetland vegetation was minimal but present, generally represented only by the heartiest wetland plants such as Nebraska sedge and Baltic rush. Because both the western and eastern swales were dammed in the distant past (prior to 1985, according to aerial imagery) for the purpose of creating stock ponds, it is likely that any wetlands that formed upgradient of these impoundments would be considered regulated WOTUS. An approved jurisdictional determination (AJD) from the U.S. Army Corps of Engineers (USACE) would be needed to confirm whether the potential aquatic resources on the site are jurisdictional (with the exception of Black Squirrel Creek, which is presumed to be jurisdictional). Since the site reconnaissance was conducted in midwinter with significant snow drifts present obscuring vegetation and frozen ground preventing hydric soil analysis, a formal wetland delineation will be conducted in the spring of 2025 in order to confirm the preliminary site findings and begin the AJD request process with the USACE.

Figure 3: Preliminary WOTUS Assessment Map



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1.7. Noxious Weeds

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 upon list category (A, B, or C). In addition, requirements have been 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.

B.E. noted various noxious weed populations on the site with few areas of concentration. Diffuse knapweed, a List B noxious weed, was observed on the north side of the streamside bench just south of Black Squirrel Creek and in the northeast corner of the site, in locations with previous human disturbances. Additionally, Canada thistle was found in the floodplain of Black Squirrel Creek and near the western swale in small concentrations. Common mullein, a List C noxious weed, was observed in abundance, widespread throughout much of the site. A site-specific plan will be developed to prevent and control the spread of noxious weeds at the construction and post-construction phases of the Project.

1.8. Wildfire Hazards

In the 2018 El Paso County Development Standards, the stated purpose and intent for fire protection and wildfire mitigation is to ensure that any proposed development is reviewed for wildfire risks and adequate fire protection (EPC 2018b). No permit 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 Falcon Fire Protection District (FFPD) coverage. There are five fire stations, three of which are staffed, within the FFPD, located as follows:

- Station 1; 12072 Royal County Down Road, Peyton CO 80831
- Station 2; 11450 North Meridian Road, Peyton CO 80831 (unmanned, utilized for maintenance and vehicle storage)
- Station 3; 7020 Old Meridian Road, Peyton CO 80831
- Station 4; 2710 Capital Drive, Colorado Springs CO 80939
- Station 6; 15355 Jones Road, Peyton CO 80831 (unmanned, utilized for equipment storage)

In total, the FFPD has the following operations equipment available:

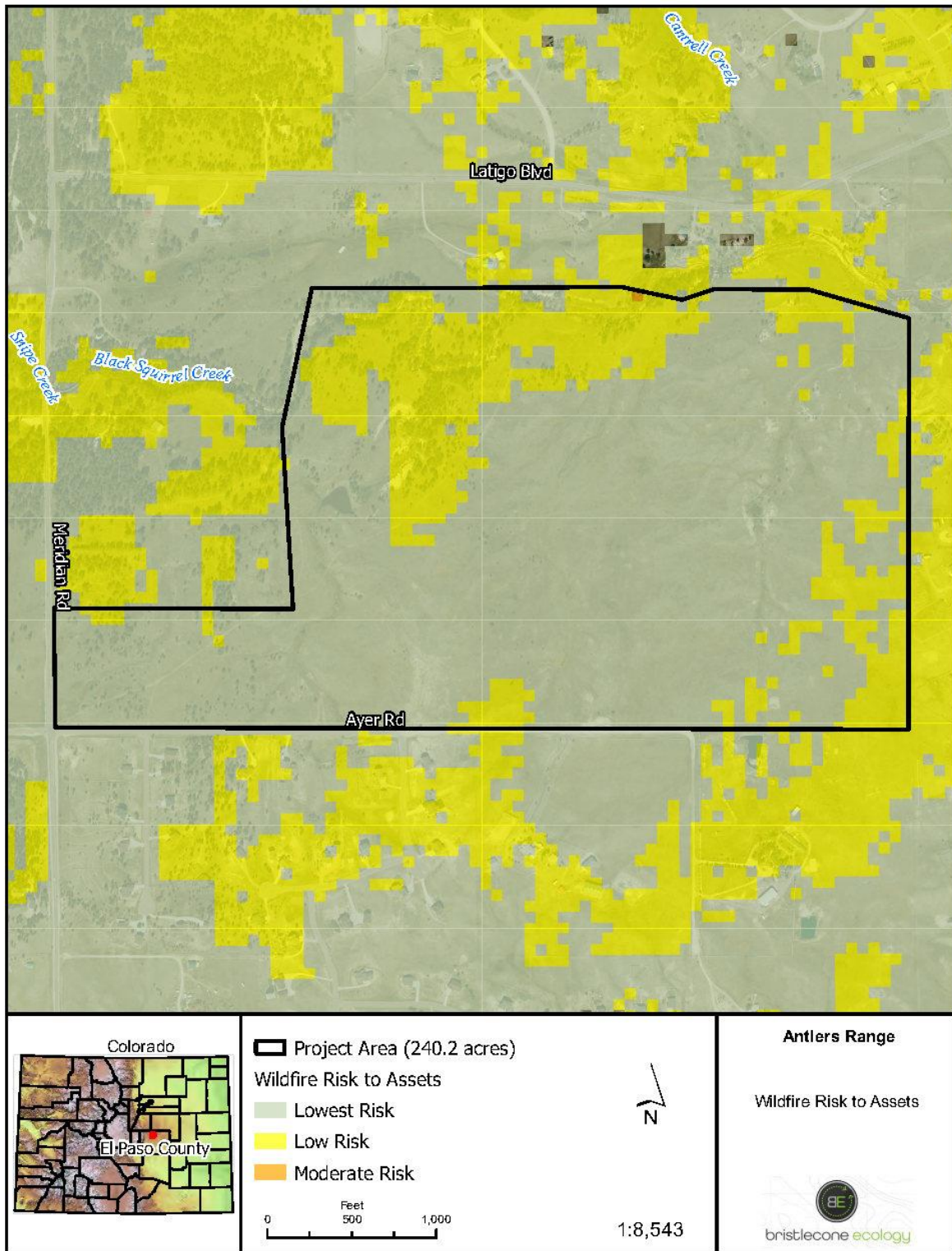
- 5 fire engines
- 7 water haulers
- 3 ambulances
- 1 command vehicle
- 1 maintenance vehicle

Wildfire hazards for the Project site were 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 to Assets at the site is about 20% "Low" risk and about 80% "Lowest" risk (CSFS 2020; **Figure 5: Wildfire Risk to Assets**). CSFS determines "Wildfire Risk to Assets" 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 about 50% of the site is rated Level 5 "Moderate", with the remaining 50% rated "High-Moderate" at Level 6 (CSFS 2020; **Figure 6: Wildfire Burn Probability**). The Fire Intensity rating – a measure of fire behavior based on available fuels, weather, and topography – is a mix of about 8% "High Intensity", 70% "Moderate Intensity", 10% "Low Intensity", and the remaining 12% rated "Lowest Intensity" (CSFS 2020; **Figure 7: Fire Intensity Rating**). The areas of "High" fire intensity generally correspond to the portions of the site that are wooded.

1.9. Flood Hazards

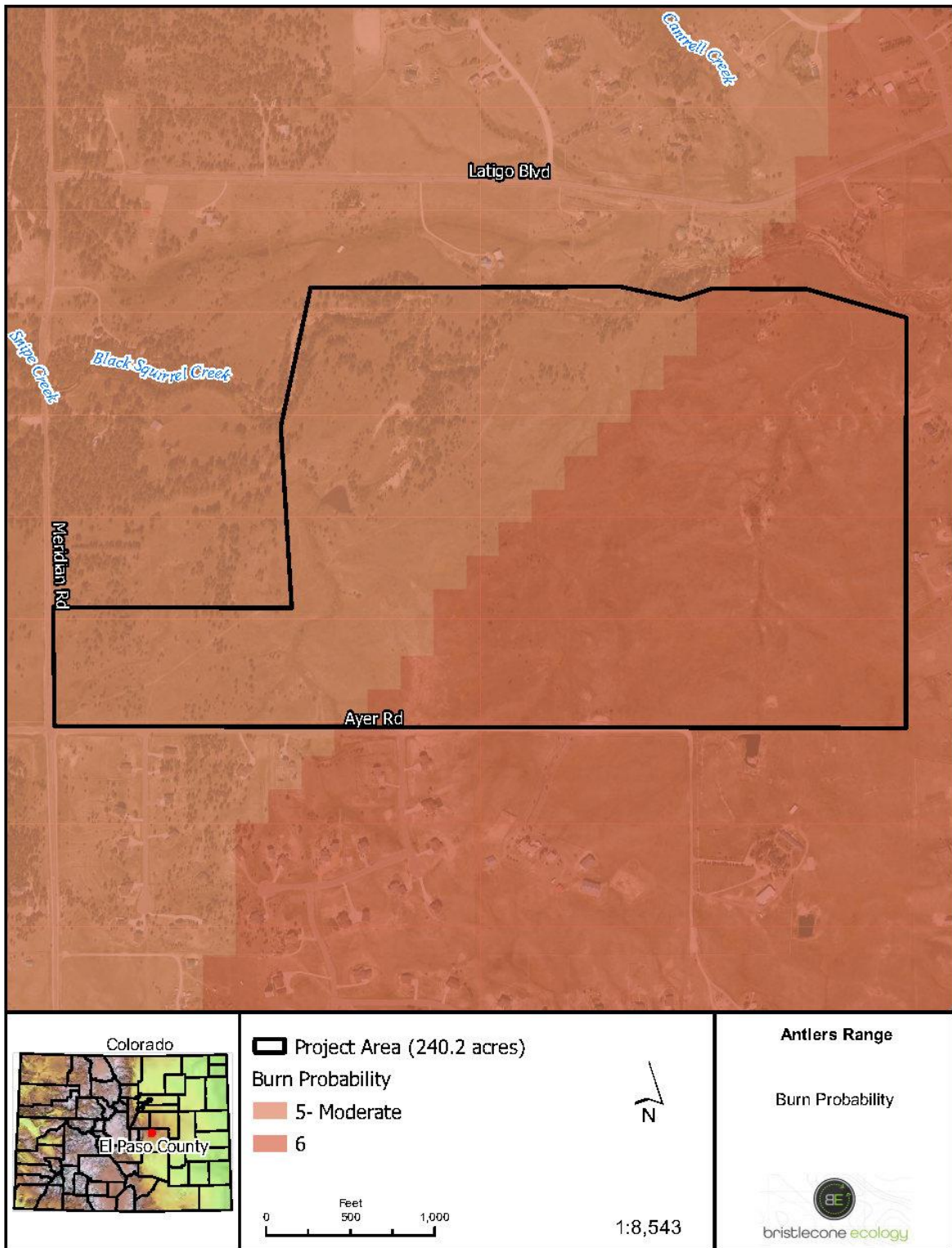
Flood hazard maps from the Federal Emergency Management Agency (FEMA) were reviewed to determine the potential for flood hazard at the site. A majority of the site is within Zone X, meaning that the area is deemed by FEMA to have minimum flood hazard "above the 500-year flood zone". The portions of Black Squirrel Creek which overlap with the Project Area are within the Zone A 100-year floodplain, and thus have a 1% annual chance of flooding (**Figure 8: FEMA Flood Hazard Map**).

Figure 4: Wildfire Risk to Assets



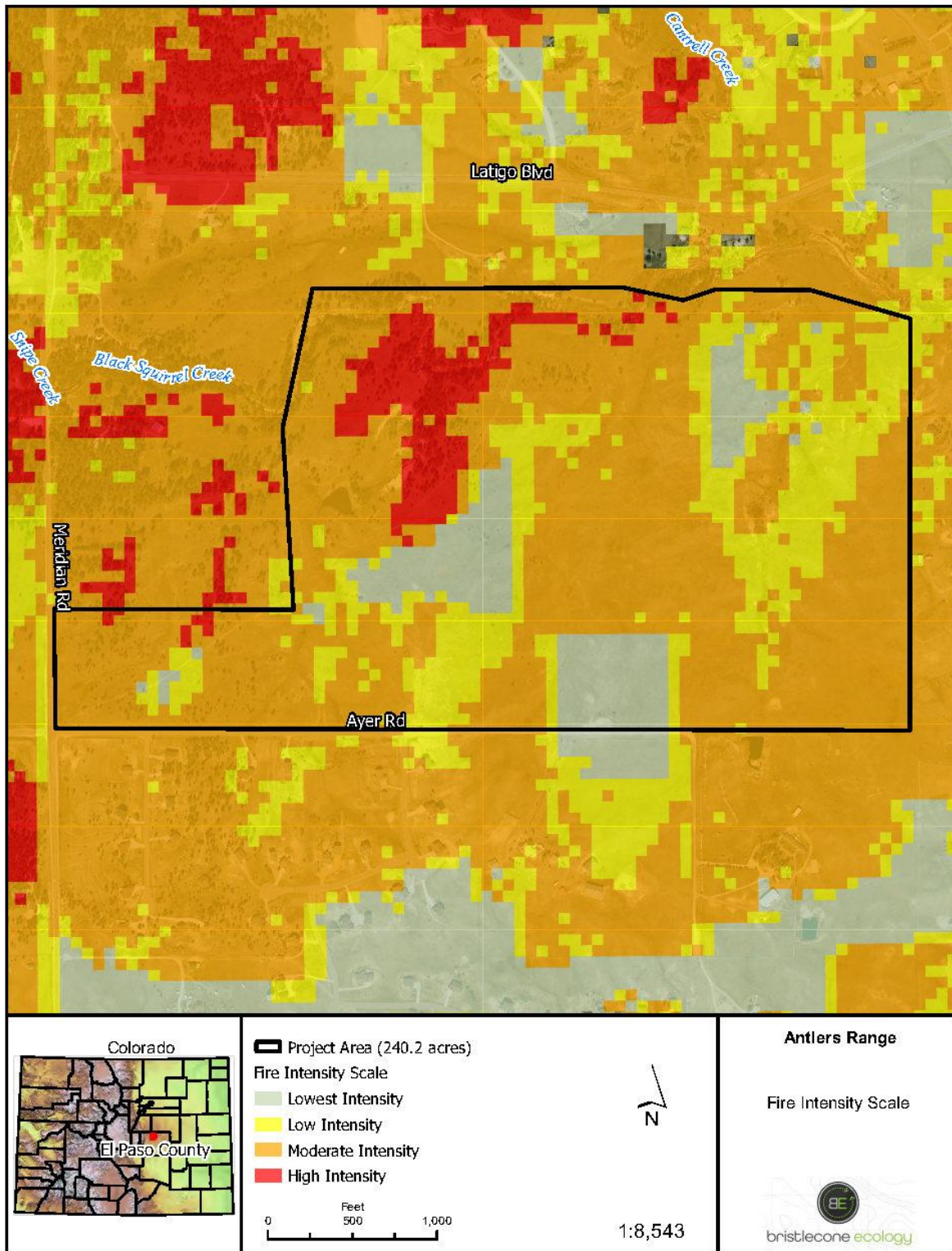
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Figure 5: Wildfire Burn Probability



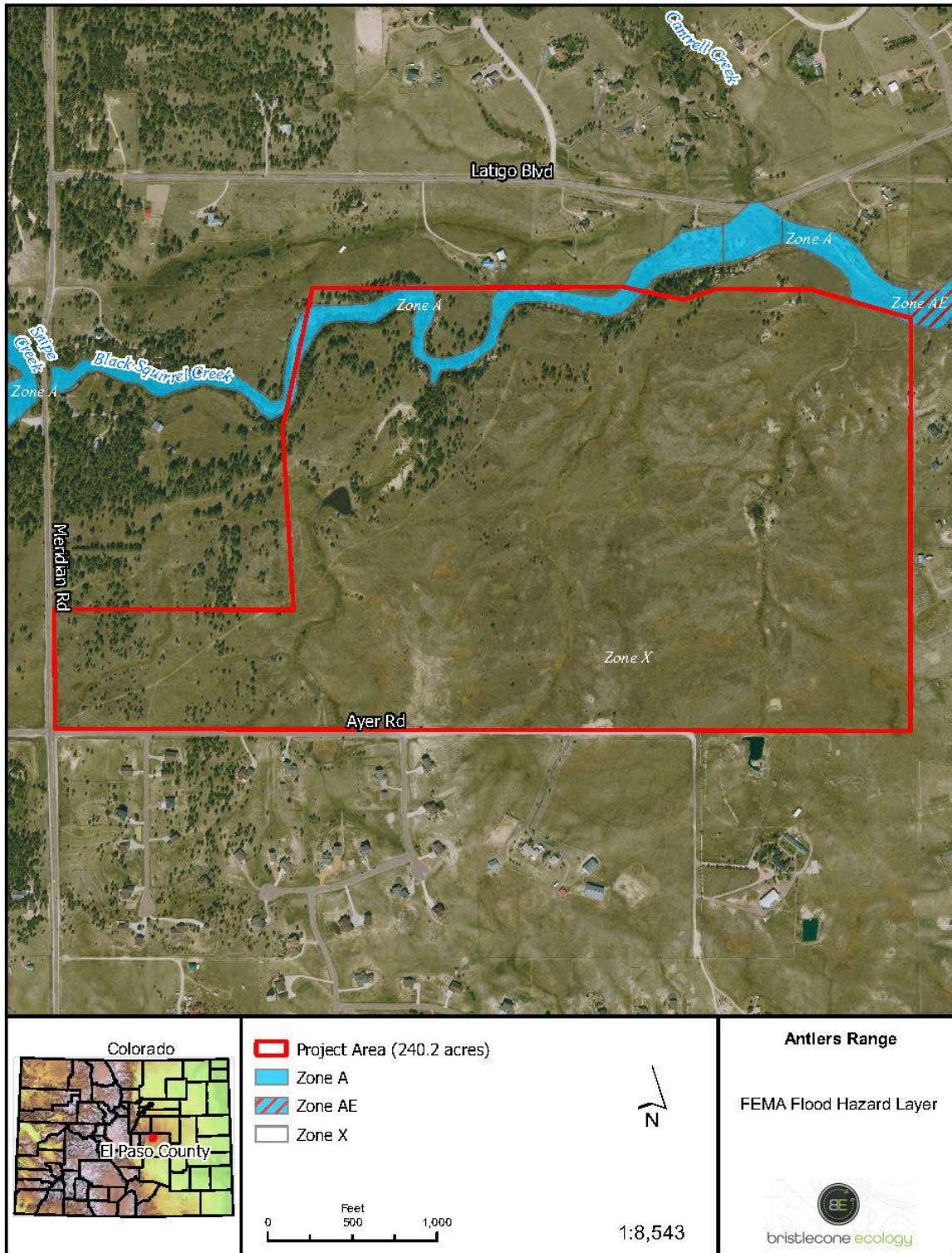
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Figure 6: Fire Intensity Scale



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Figure 7: FEMA Flood Hazard Map



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1.10. 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 one mammal, two birds, one fish, two insects, and one flowering plant, with the potential to occur within or be affected by development in the Project Area (**Table 2: Federally Listed T&E Species Potentially Impacted by the Project**, and **Appendix C: IPaC Resource List**). B.E. has provided our professional opinion regarding the probability of occurrence of T&E species at the Project site and their probability of being impacted.

Table 2. 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 |
|-------------------------------|--|--|-----------------------------|
| Mammals | | | |
| Preble's meadow jumping mouse | <i>Zapus hudsonius preblei</i> | Inhabits well-developed riparian corridors with a nearby water source and adjacent, relatively undisturbed grassland communities. Riparian habitat includes a dense combination of grasses, forbs, and shrubs; a taller shrub and tree canopy may be present. Has been found to regularly use uplands at least as far out as 300 feet beyond the 100-year floodplain. Individuals have previously been captured approximately 2 miles downstream of the Project area, but it is unknown if mice inhabit this reach. Likelihood of impacts: Possible, if development will occur within potential habitat boundaries, defined as any area within 300 feet of the 100-year floodplain. | FT, ST |
| Birds | | | |
| Piping plover | <i>Charadrius melodus</i> | Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. Likelihood of impacts: None, the Project is not within the watersheds listed. | FT |
| Eastern black rail | <i>Laterallus jamaicensis ssp. jamaicensis</i> | 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 [<i>Typha</i> spp.] or bulrushes [<i>Schoenoplectus / Scirpus</i> spp.]) and moist to saturated soils. Eastern black rails have been expanding their range in Colorado. Likelihood of impacts: None, suitable habitat is not available on the site. | FT |
| Fish | | | |
| Pallid sturgeon | <i>Scaphirhynchus albus</i> | Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. Likelihood of impacts: None, the Project is not within the watersheds listed. | FE |

¹FE= Federally Endangered; FT=Federally Threatened; ST=State Threatened; C=Candidate for Listing

Table 2. Federally Listed T&E Species Potentially Impacted by the Project, cont. (USFWS 2022)

| Common Name | Scientific Name | Habitat Requirements and Likelihood of Impacts | Federal Status ¹ |
|-----------------------------|------------------------------|--|-----------------------------|
| Insects | | | |
| Monarch butterfly | <i>Danaus plexippus</i> | Monarch butterflies require milkweeds (<i>Asclepias</i> spp.) as a host plant. Caterpillars consume the plant, and adults lay their eggs on milkweed. Monarch butterfly is a Proposed Threatened species for listing under the ESA. While there are no requirements until a listing decision is made, a 4(d) Rule has been proposed and due diligence is encouraged. Likelihood of impacts: Unknown, the midwinter site visit did not allow for milkweed observation; site will be revisited in spring of 2025 to confirm. Impacts would be minimal, if any. | P |
| Suckley's Cuckoo Bumble Bee | <i>Bombus suckleyi</i> | Suckley's cuckoo bumblebee is a social parasite that relies entirely on other species of bumblebees as hosts. The last confirmed sighting in the U.S. was in 2016 in Oregon (USFWS 2024). May be found anywhere robust bumblebee colonies are present. While there are no requirements until a listing decision is made, due diligence is encouraged. Likelihood of impacts: Very Unlikely, site development is unlikely to affect bumblebee host colonies. | P |
| Flowering Plants | | | |
| Ute ladies'-tresses orchid | <i>Spiranthes diluvialis</i> | 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. Likelihood of impacts: Unlikely, there are no known populations in El Paso County and the site is above the elevation threshold where the species occurs (7,000 feet). Surveys are not required above this threshold. | FT |

¹FE= Federally Endangered; FT=Federally Threatened; ST=State Threatened; C=Candidate for Listing

1.11. Wildlife Communities

The Project site provides moderate quality habitat for some grassland wildlife, including birds, mammals, reptiles, and amphibians, as well as potentially moderate to high quality wetland habitat for these species. Development of the site would inevitably affect some habitat for wildlife. 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 (CPW 2023). The Colorado Natural Heritage Program (2024) 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 15 mammals, 14 reptiles and 12 birds, and, including one SC mammal, one state threatened bird, and one federally protected bird (**Table 3: SAM Wildlife Potential for Occurrence**).

In general, sensitive wildlife species and Colorado SC species do not receive statutory protections. Some of the species listed in the SAM data have additional designations that may afford them additional protections. The Project area does not intersect with big game migratory routes, though it does intersect with mountain lion (*Puma concolor*) and black bear (*Ursus americanus*) human conflict areas, and a mule deer (*Odocoileus hemionus*) concentration area and resident population area (CPW 2023). Development of residential properties has the potential to attract black bears and mountain lions if trash or pets are readily available for forage/as prey animals. The Project Area is within the overall range of black-tailed prairie dog (*Cynomys ludovicianus*), which is a Colorado SC and provides nesting and roosting habitat for the state threatened burrowing owl (*Athene cunicularia*). The Project Area is also within the breeding range of burrowing owls (CPW 2023) and of many additional sensitive bird species, as well as overall range for sensitive bats, lizards, snakes, turtles, and other wildlife (**Table 3**).

Table 3. SAM Wildlife Potential for Occurrence (CPW 2023; CNHP 2024)

| Common Name | Scientific Name | Type of Occurrence (CPW 2023) | Status ^{1,2} |
|-------------------------------|----------------------------------|---|-----------------------|
| Mammals | | | |
| Big brown bat | <i>Eptesicus fuscus</i> | Overall range | n/a |
| Black bear | <i>Ursa americanus</i> | Overall range Human conflict area Summer concentration area | n/a |
| Black-tailed prairie dog | <i>Cynomys ludovicianus</i> | Low occurrence | SC, S3 |
| Fringed myotis | <i>Myotis thysanodes</i> | Overall range | G4, S3 |
| Hoary bat | <i>Lasiurus cinereus</i> | Overall range | n/a |
| Little brown myotis | <i>Myotis lucifugus</i> | Overall range | n/a |
| Mountain lion | <i>Puma concolor</i> | Overall range Human conflict area | n/a |
| Mule deer | <i>Odocoileus hemionus</i> | Overall range Concentration area Resident population area | n/a |
| Olive-backed pocket mouse | <i>Perognathus fasciatus</i> | Overall range | G5, S3 |
| Preble's meadow jumping mouse | <i>Zapus hudsonius preblei</i> | Overall range | FT, ST |
| Pronghorn | <i>Antilocapra americana</i> | Overall range | n/a |
| Red bat | <i>Lasiurus borealis</i> | Overall range | G3G4, S2S3B |
| Silver-haired bat | <i>Lasionycteris noctivagans</i> | Overall range | n/a |
| White-tailed deer | <i>Odocoileus virginianus</i> | Overall range | n/a |
| White-tailed jackrabbit | <i>Lepus townsendii</i> | Overall range | n/a |

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

²State (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 3, Cont. SAM Wildlife Potential for Occurrence (CPW 2023; CNHP 2024)

| Common Name | Scientific Name | Type of Occurrence (CPW 2023) | Status ^{1,2} |
|-----------------------------------|---------------------------------|-------------------------------|-----------------------|
| Reptiles and Amphibians | | | |
| Bullsnake | <i>Pituophis catenifer sayi</i> | Overall range | n/a |
| Coachwhip | <i>Masticophis flagellum</i> | Overall range | n/a |
| Common lesser earless lizard | <i>Holbrookia maculata</i> | Overall range | n/a |
| Hernandez short-horned lizard | <i>Phrynosoma hernadesi</i> | Overall range | n/a |
| Milksnake | <i>Lampropeltis elapsoides</i> | Overall range | n/a |
| Ornate box turtle | <i>Terrapene ornata ornata</i> | Overall range | n/a |
| Painted turtle | <i>Chrysemys picta</i> | Overall range | n/a |
| Plains garter snake | <i>Thamnophis radix</i> | Overall range | n/a |
| Prairie lizard | <i>Sceloporus consobrinus</i> | Overall range | n/a |
| Plateau fence lizard | <i>Sceloporus tristichus</i> | Overall range | n/a |
| Six-lined Racerunner | <i>Aspidozelis sexlineata</i> | Overall range | n/a |
| Smooth greensnake | <i>Opheodrys vernalis</i> | Overall range | n/a |
| Terrestrial garter snake | <i>Thamnophis elegance</i> | Overall range | n/a |
| Variable skink / many lined skink | <i>Plestiodon multivirgatus</i> | Overall range | n/a |
| Birds | | | |
| Band-tailed pigeon | <i>Patagioenas fasciata</i> | Breeding range | n/a |
| Brewer's sparrow | <i>Spizella breweri</i> | Breeding range | S4B |
| Burrowing owl | <i>Athene cunicularia</i> | Breeding range | ST |
| Cassin's sparrow | <i>Peucaea cassinii</i> | Breeding range | n/a |
| Golden eagle | <i>Aquila chrysaetos</i> | Breeding range | BGEPA, S3S4B |
| Grasshopper sparrow | <i>Ammodramus savannarum</i> | Breeding range | S3S4B |
| Lark bunting | <i>Calamospiza melanocorys</i> | Breeding range | S4 |
| Lazuli bunting | <i>Passerina amoena</i> | Breeding range | S5B |
| Northern harrier | <i>Circus hudsonius</i> | Breeding range | S3B |
| Prairie falcon | <i>Falco mexicanus</i> | Breeding range | S4B, S4N |
| Rufous hummingbird | <i>Selasphorus rufus</i> | Migration range | n/a |
| Swainson's hawk | <i>Buteo swainsoni</i> | Breeding range | S5B |

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

²State (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 to conduct a general wildlife survey. The proposed development may have varying impacts on wildlife depending on habitat quality across the site.

While the grassland areas provide only moderate quality habitat, Black Squirrel Creek offers high-quality wetland habitat that supports a greater diversity of wildlife species. The western swale connected to Black Squirrel Creek supports low-quality wetlands with minimal plant diversity. Wooded areas on the site were found to support the highest diversity of animals during the site visit.

In terms of sensitive species, some of the species listed in the SAM data are likely to occur on the site, though few of the species listed were observed (owing in part to the timing of the survey). The majority are either not expected to occur or may occur only infrequently based on available habitat. Only one of the sensitive species for which CPW has mapped ranges and High Priority Habitats were observed within the Project Area. A single mule deer was observed in the scattered ponderosa pine forest in the northwest part of the Project Area. The entire site is mapped as a Mule Deer Concentration Area. Other species such as big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), common lesser earless lizard (*Holbrookia maculata*), plains garter snake (*Thamnophis radix*), prairie lizard (*Sceloporus consobrinus*), grasshopper sparrow (*Ammodramus savannarum*), lark bunting (*Calamospiza melanocorys*), and Northern harrier (*Circus hudsonius*) are species in the SAM data that could reasonably be expected to occur on-site in the appropriate seasons and in the appropriate habitats.

Golden eagles (*Aquila chrysaetos*), which nest mostly on cliffs in mountainous areas, receive federal protection under the Bald and Golden Eagle Protection Act (BGEPA). Golden eagles may occasionally nest in large trees (primarily cottonwoods) on Colorado's eastern plains. No cliffs or large cottonwoods are within the Project area and no eagle-sized nests were observed in any of the trees. There are also no large bodies of water within or near the site, so it is unlikely that bald eagles (*Haliaeetus leucocephalus*) would occur except accidentally. Raptor species may utilize the site for hunting. Nests were not observed in any of the trees on the site during the site visit.

The Project area also provides habitat for additional mammals, including rodents, ungulates, and carnivores. Other than coyote (*Canis latrans*), cottontail (*Sylvilagus* sp.), and mule deer, mammals were not observed during the site reconnaissance, but other species may be expected to occur, including gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), and the aforementioned black bear.

No prairie dog (*Cynomys* spp.) colonies were present within the Project Area, and no other burrows or dens were observed that would suggest nesting or roosting habitat for burrowing owls exists. The Project Area is within burrowing owl breeding range, and thus, burrowing owls could migrate through the area. However, the lack of nesting and roosting resources suggest burrowing owls are unlikely to use the site even in migration.

Several species of birds were observed during the site visit, including black-billed magpie (*Pica hudsonia*), Steller's Jay (*Cyanocitta stelleri*), dark-eyed junco (*Junco hyemalis*), mountain chickadee (*Poecile gambeli*), white-breasted nuthatch (*Sitta carolinensis*), pygmy nuthatch (*Sitta pygmaea*), northern flicker (*Colaptes auratus*) and house finch (*Haemorhous mexicanus*). Additional migratory bird species should be expected to occur during the spring, summer, and fall.

No amphibians were observed during the survey. Chorus frogs (*Pseudacris* spp.) are the most likely other species of amphibian to be present, though plains leopard frogs (*Lithobates blairi*) or Northern leopard frogs (*L. pipiens*) could also occur, though they were not listed in the SAM data as occurring in the site's watershed.

4.0 SUMMARY OF IMPACTS

4.1. Vegetation

Development of the Project site will unavoidably disturb existing vegetation within the Level IV Foothill Grasslands ecoregion, with up to 240.2 acres potentially affected by the installation of roadways, detention ponds, and drainage infrastructure, as well as future residential development by lot owners. While a full assessment of sensitive vegetation communities has not yet been conducted due to the site's wintertime conditions and snow cover, it is unlikely that sensitive plant communities will be impacted.

Additionally, wetland vegetation is not expected to be disturbed, though the potential to affect wetland communities remains undetermined. Wetland vegetation observed during the reconnaissance included peach-leaf willow, sandbar willow, cattails, sedges, rushes, and grasses, representing a well-developed and diverse community in Black Squirrel Creek. The swales on the site are not expected to be jurisdictional, with the exception of the lower reach of the western swale. Vegetation in the swales is much lower quality than Black Squirrel Creek and has very little diversity. Further assessment will be necessary to determine the full scope of vegetation impacts, particularly regarding wetland plant communities.

4.2. Soils

Soils at the site included sandy loam belonging predominantly to the Pring series, the gravelly loamy sand belonging to the Kettle series found along Black Squirrel Creek, and the Pleasant minor component. These soils are all rated 'Not Limited' for the development of residential buildings, with or without basements.

4.3. Significant Topography and Natural Landforms

Surveyance of the site identified three swales, with the western swale playing the most significant role in hydrologic conveyance. Evidence of this function included the presence of wrack lines, indicating periodic water flow, and a direct connection to Black Squirrel Creek. Project development may alter the hydrology of this swale by disrupting natural drainage patterns, potentially affecting water flow into the Black Squirrel Creek. Changes in surface runoff are expected based on increases in impervious surfaces, which could reduce groundwater infiltration, alter sediment transport, and affect wetland habitat quality in Black Squirrel Creek. The central and eastern swales are more ephemeral, with the central swale being nearly unidentifiable, contributing minimally to overall site hydrology. The rest of the site consists of rolling foothill grasslands, lacking any other significant geologic features that could be affected by site development.

4.4. Aquatic Resources

There are multiple aquatic resources on the Project site, including wetlands associated with Black Squirrel Creek and the hydrologically connected western swale, which acts as a tributary to the channel. Other aquatic resources on the site include several wetlands that appeared to be isolated from WOTUS during the site visit. While a full delineation of the aquatic features on the

site could not be completed, B.E. noted the absence of hydrologic connection between all aquatic features and downstream WOTUS, except for the western tributary below the stock pond impoundment and Black Squirrel Creek. As such, an AJD will be necessary to determine the regulatory status of wetlands on the site after completing a full wetland delineation in the spring of 2025. This delineation will refine the extent of wetlands and other potential WOTUS within the Project site, and allow any potential impacts to WOTUS to be calculated. Until this assessment is conducted, it remains uncertain whether a Section 404 permit under the Clean Water Act will be required for project development. The results of the delineation and subsequent AJD will guide permitting requirements and help ensure compliance with federal regulations while informing site planning to minimize potential impacts on wetlands and hydrologic features.

4.5. Noxious Weeds

Noxious weeds are present on the Project site in several areas but in limited quantities, mainly in more disturbed areas where weeds tend to congregate. 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 and List C noxious weeds that were detected during the site reconnaissance included:

List B:

- Canada thistle
- Diffuse knapweed

List C:

- Common mullein

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. In accordance with EPC requirements, a Noxious Weed Management Plan should be developed detailing recommendations for identifying and controlling the spread of noxious weeds prior to, during, and following construction.

4.6. Wildfire Hazard

Approximately 80% of the Project area is mapped as 'Lowest' wildfire risk to assets while the remaining 20% is mapped as 'Low' risk. The site is rated around 50% Level 5 'Moderate' and 50% Level 6 'High-Moderate' in terms of burn probability based on the available fuels at the site, which includes disturbed and undisturbed grasslands, and a few stands of ponderosa pines. Fire intensity varies across the site, with ratings from 'Lowest' to 'High', although most of the site is rated as 'Moderate'. The nearest fire response is Station 2 in the Falcon Fire Protection District (FFPD), which is located about 0.8 miles from the site; the second closest station is Station 1, also in the FFPD, which is 3.2 miles away.

Development of the site would result in a reduction of the available fuels for wildfires, and would potentially reduce fire intensity through the removal of pine trees, 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 somewhat higher after development.

4.7. 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. Any designated open spaces may also conserve some of the grassland, wetland, and woodland habitats that are currently available, but open, undisturbed grasslands are expected to be reduced overall.

Since grasslands are the most dominant habitat type, grassland species are expected to experience the greatest adverse impacts. Deer, foxes, bears, and coyotes may experience adverse effects from the increase in urbanization in close proximity to wildland areas. Few sensitive species were present and only in small numbers, and thus are not expected to be affected any more than other species. State SC black-tailed prairie dogs were not present, and thus the state-threatened burrowing owl is also not anticipated to use the Project site.

Implementation of a stormwater management plan will assist in protecting water quality downstream, which will provide some benefits to aquatic species including invertebrates. Detention facilities may add seasonal water features that could support additional wildlife such as waterfowl and amphibians.

4.8. Federally Listed T&E Species

The IPaC identified seven Federally Listed T&E species within the project area, but the likelihood of impacts to any of these species is low or unlikely. While suitable riparian and upland habitats exists for Preble's jumping mouse, it is not certain that mice inhabit this stretch of Black Squirrel Creek, which supports a disjunct Preble's population approximately two miles downstream. If development occurs within 300 feet of the 100-year floodplain of Black Squirrel Creek, it is possible that secondary Preble's habitat (grasslands adjacent to the creek) could be affected. There is no suitable marshy habitat for the Eastern black rail, eliminating any risk to this species. Impact to monarch butterflies remains uncertain, as site reconnaissance did not confirm the presence of milkweed, their host plant.

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. Wetland habitats requiring regulation including jurisdictional WOTUS may be present on the Project site. A formal wetland delineation is to be performed in Spring 2025, and an AJD from the USACE is to be obtained in order to determine whether or not a Section 404 permit is required. Until this assessment is conducted, it remains uncertain whether a Section 404 permit under the Clean Water Act will be required for project development. The results of the delineation and subsequent AJD will guide permitting requirements and help ensure compliance with federal regulations while informing site planning to minimize potential impacts on wetlands and hydrologic features.

5.2. Endangered Species Act

Section 9(a)(1) of the Endangered Species Act prohibits the take of listed species and their habitats, defining take as any action that harasses, harms, or otherwise negatively affects the species (16 U.S.C. § 1531). Black Squirrel Creek appears to provide the Primary Constituent Elements (PCEs) for Preble's meadow jumping mouse, as observed during the preliminary site reconnaissance. Given that the species has been previously captured approximately two miles downstream from the Project site, it is possible that mice could occupy the stretch of creek within the Project site. If development will occur within 300 feet of the 100-year floodplain of Black Squirrel Creek, it is possible that Preble's mice could be affected by the Project. Based on the USFWS IPaC report, the project is not located within the required river basins and does not accommodate habitats for other federally listed species. As a result, no impacts to any other listed species are anticipated from site development. In order to ensure compliance with Section 9(a)(1) of the ESA, it is recommended that the Applicant seek concurrence from the USFWS for a determination of effects to listed species, specifically Preble's meadow jumping mouse.

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, and suitable nesting substrates for raptors were not available within the site. Nesting substrates for other migratory birds are present in the form of open grasslands and pine woodlands, which are both expected to be used by some migratory birds during the breeding season.

It is recommended that vegetation clearing/grubbing/grading 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, ground nesting songbirds are expected to use the available grasslands at the site and surveys should be conducted to avoid 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 Project should develop a site-specific Noxious Weed Management Plan, and site-specific weed management in accordance with such a plan should be implemented on an ongoing basis. In particular, control of diffuse knapweed and Canada thistle (or any other List B noxious weeds observed on the site) is required by Colorado law.

5.5. Non-Statutory Considerations

There is potential for other wildlife, including big game such as black bear and mule deer to occur within the site. However, no big game migratory routes traverse the Project. The site is listed as a mule deer concentration area by CPW, as well as an area of potential human conflict for black bears and mountain lions. Coordination with CPW is recommended to determine the appropriate avoidance measures to take during and after construction regarding general wildlife. Impacts to wildlife should be reduced as much as is practical 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
Owner/Ecologist

6.0 REFERENCES

- CDA (Colorado Department of Agriculture). 2006. 8 CCR 1206-2 – Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act.
- Chapman, S.S., G.E. Griffith, J.M. Omernik, A.B. Price, J. Freeouf, and D.L. Schrupp. 2006. Ecoregions of Colorado (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,200,000).
- CNHP (Colorado Natural Heritage Program). 2024. Colorado's Conservation Data Explorer (CODEX). Colorado Natural Heritage Program, Colorado State University, Fort Collins. <https://codex.cnhp.colostate.edu/>
- Colorado Weed Management Association. (CWMA). 2015. Colorado State Noxious Weed List.
- CPW. 2023. CPW Species Activity Mapping Data. Updated December 22, 2023. <https://www.arcgis.com/home/item.html?id=190573c5aba643a0bc058e6f7f0510b7>
- CSFS (Colorado State Forest Service). 2020. Wildfire Risk Assessment Portal (WRAP). <https://copub.coloradoforestatlas.org/#/>. Accessed September 25, 2024.
- EPC (El Paso County). 2018a. El Paso County Noxious Weeds and Control Methods. <https://assets-communityservices.elpasoco.com/wp-content/uploads/Environmental-Division-Picture/Noxious-Weeds/Noxious-Weed-Control-Book.pdf>
- EPC. 2018b. El Paso County Land Development Code. <https://planningdevelopment.elpasoco.com/land-development-code/>
- EPC. 2017. El Paso County Noxious Weed Management Plan. <https://assets-communityservices.elpasoco.com/wp-content/uploads/Environmental-Division-Picture/Noxious-Weeds/Weed-Management-Plan-December-2017.pdf>
- Katzner, T. E., M. N. Kochert, K. Steenhof, C. L. McIntyre, E. H. Craig, and T. A. Miller (2020). Golden Eagle (*Aquila chrysaetos*), version 2.0. In Birds of the World (P. G. Rodewald and B. K. Keeney, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.goleag.02>
- NRCS (Natural Resources Conservation Service). 2024a. Web Soil Survey. Available at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed September 15, 2024.
- NRCS. 2024b. Building Site Development: Dwellings and Small Commercial Buildings Report. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed September 15, 2024.

- NRCS. 2024c. Building Site Development: Hydrologic Soil Group Report.
<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed September 15, 2024.
- NRCS. 2024d. Building Site Development: Hydric Soil Rating Report.
<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed September 15, 2024.
- State of Colorado. 2003. Colorado Revised Statutes, Title 35 Agriculture, Article 5.5 Colorado Noxious Weed Act.
- USDA (U.S. Department of Agriculture). 2020. National Agriculture Imagery Program.
- USFWS (United States Fish and Wildlife Service). 2024. Information for Planning and Consultation Online System. <https://ecos.fws.gov/ipac/>. Accessed September 15, 2024.
- USFWS. 2017. Critical Habitat Portal. http://ecos.fws.gov/tess_public/profile/speciesProfile?sPCODE=EooF. Accessed September, 2024.
- USFWS. 1992. Interim Survey Requirements for Ute Ladies-tresses' Orchid (*Spiranthes diluvialis*). https://www.fws.gov/utahfieldoffice/Documents/Plants/SPDI_interimSurveyRequirements_1992.pdf



APPENDIX A

PHOTOGRAPHIC LOG



Photo 1 – Black Squirrel Creek facing northwest



Photo 2 – Black Squirrel Creek, in-channel, facing west, with flowing water visible in mid-January



Photo 3 – View of the stock pond and topography in the eastern swale, facing southwest. The breach in the pond impoundment is just behind the viewer; the swale continues below the breach, then disappears entirely before reaching Black Squirrel Creek.



Photo 4 – Black Squirrel Creek viewed from uplands above the floodplain, facing north-northwest near east side of property. The habitat is high quality for Preble’s meadow jumping mouse, but the site is separated from other populations and mice may not be present.



Photo 5 – View of the western swale between the stock pond and the wooded gulch that empties into Black Squirrel Creek. Nebraska sedge and Baltic rush were clearly visible in the swale, which is likely a jurisdictional wetland.



Photo 6 – View of the western swale stock pond from atop the manmade berm, facing northwest.



Photo 7 – View of the central swale which is barely discernible as a shallow topographic shift. The swale disappears downgradient.



Photo 8 – Overview of the eastern half of the site, which is largely uniform, rolling, foothill grasslands.



APPENDIX B

IPAC RESOURCE LIST

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

El Paso County, Colorado



Local office

Colorado Ecological Services Field Office

☎ (303) 236-4773

📠 (303) 236-4005

MAILING ADDRESS

Denver Federal Center
P.O. Box 25486
Denver, CO 80225-0486

PHYSICAL ADDRESS

1 Denver Federal Center
Bldg 53 Room Fw100}
Denver, CO 80225-0001

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

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 from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

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1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

| NAME | STATUS |
|--|-------------------|
| <p>Preble's Meadow Jumping Mouse <i>Zapus hudsonius preblei</i></p> <p>Wherever found</p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat.</p> <p>https://ecos.fws.gov/ecp/species/4090</p> | Threatened |

Birds

| NAME | STATUS |
|---|-------------------|
| <p>Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i></p> <p>Wherever found</p> <p>No critical habitat has been designated for this species.</p> <p>https://ecos.fws.gov/ecp/species/10477</p> | Threatened |
| <p>Piping Plover <i>Charadrius melodus</i></p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> Project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins which may affect listed species in Nebraska. <p>There is final critical habitat for this species. Your location does not overlap the critical habitat.</p> <p>https://ecos.fws.gov/ecp/species/6039</p> | Threatened |

Fishes

| NAME | STATUS |
|------|--------|
|------|--------|

Pallid Sturgeon *Scaphirhynchus albus* Endangered

Wherever found

This species only needs to be considered if the following condition applies:

- Project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins which may affect listed species in Nebraska.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7162>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus* Proposed Threatened

Wherever found

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/9743>

Suckley's Cuckoo Bumble Bee *Bombus suckleyi* Proposed Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/10885>

Flowering Plants

NAME

STATUS

Ute Ladies'-tresses *Spiranthes diluvialis* Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/2159>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME

BREEDING SEASON

Bald Eagle *Haliaeetus leucocephalus*

Breeds Oct 15 to Jul 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Golden Eagle *Aquila chrysaetos*

Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey

effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

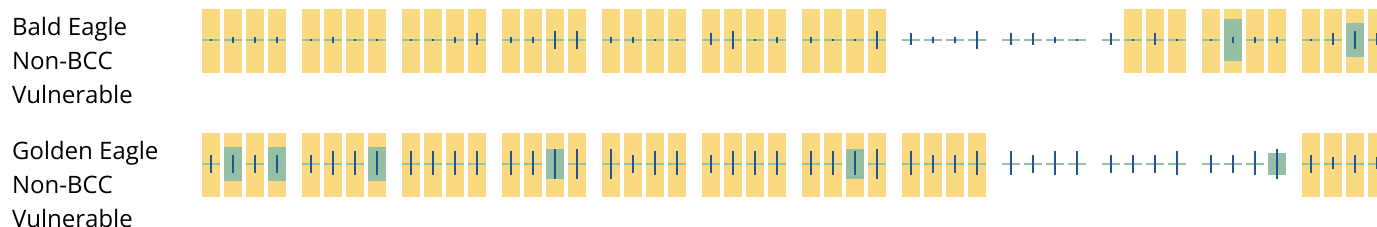
No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of

presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA)¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and->

[golden-eagles-may-occur-project-action](#)

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

| NAME | BREEDING SEASON |
|--|-------------------------|
| <p>Bald Eagle <i>Haliaeetus leucocephalus</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p>https://ecos.fws.gov/ecp/species/1626</p> | Breeds Oct 15 to Jul 31 |
| <p>Broad-tailed Hummingbird <i>Selasphorus platycercus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> | Breeds May 25 to Aug 21 |
| <p>Ferruginous Hawk <i>Buteo regalis</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/6038</p> | Breeds Mar 15 to Aug 15 |

| | |
|---|-------------------------|
| <p>Golden Eagle <i>Aquila chrysaetos</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p>https://ecos.fws.gov/ecp/species/1680</p> | Breeds Dec 1 to Aug 31 |
| <p>Grasshopper Sparrow <i>Ammodramus savannarum</i> <i>perpallidus</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/8329</p> | Breeds Jun 1 to Aug 20 |
| <p>Lesser Yellowlegs <i>Tringa flavipes</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9679</p> | Breeds elsewhere |
| <p>Northern Harrier <i>Circus hudsonius</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/8350</p> | Breeds Apr 1 to Sep 15 |
| <p>Pinyon Jay <i>Gymnorhinus cyanocephalus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9420</p> | Breeds Feb 15 to Jul 15 |
| <p>Whimbrel <i>Numenius phaeopus hudsonicus</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> | Breeds elsewhere |

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort — no data



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as “Vulnerable”. See the

FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of

presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

[PUBE](#)

RIVERINE

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

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.

NOT FOR CONSULTATION