

**Wildlife and Natural Features Report
for
Welsch-Howells Subdivision in El Paso County, Colorado**

January 26, 2026

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LIST OF ACROYNMS AND ABBREVIATIONS

AMSL	above mean sea level
BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
CDA	Colorado Department of Agriculture
CNHP	Colorado Natural Heritage Program
CECMC	Colorado Energy & Carbon Management Commission
CPW	Colorado Parks and Wildlife
CWA	Clean Water Act
ECOS	Ecosystem Services, LLC
ESA	Endangered Species Act
Guman	William Guman & Associates, Ltd.
LEDPA	Least Environmentally Damaging and Practicable Alternative
MBTA	Migratory Bird Treaty Act
NRCS	Natural Resource Conservation Service
NTCHS	Technical Committee for Hydric Soils
NWI	National Wetland Inventory
PCA	CNHP Potential Conservation Area
PMJM	Preble's meadow jumping mouse
Project	Welsch-Howells Subdivision project
Report	Wildlife and Natural Features Report
Site	Project site
T&E	Threatened and Endangered species
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

Ecosystem Services, LLC (ECOS) was retained by Willian Guman & Associates, Ltd. (Guman) on behalf of Randy Welsh (Landowner) to perform a natural resource assessment for the 5-acre Welsch-Howells Subdivision site (Site and Project) and to prepare this Wildlife and Natural Features Report (Report).

The contact information for the Guman and ECOS representatives for this Report is provided below:

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1.1 Purpose

The purpose of the assessment is to compare background information with present-day conditions, ascertain the physical/ecological characteristics and conditions of the Site, identify potential environmental opportunities and constraints associated with development improvements, and determine the presence/absence and approximate extent of the following features:

- Vegetation Communities, including weeds and noxious weeds;
- Natural landforms and natural features;
- Wildlife and their habitat, including:
 - Federal listed threatened and endangered species habitat regulated under the Endangered Species Act (ESA);
 - Migratory birds and raptors regulated under the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BEGPA)
- Wildland Fire Hazards

1.2 Site Location

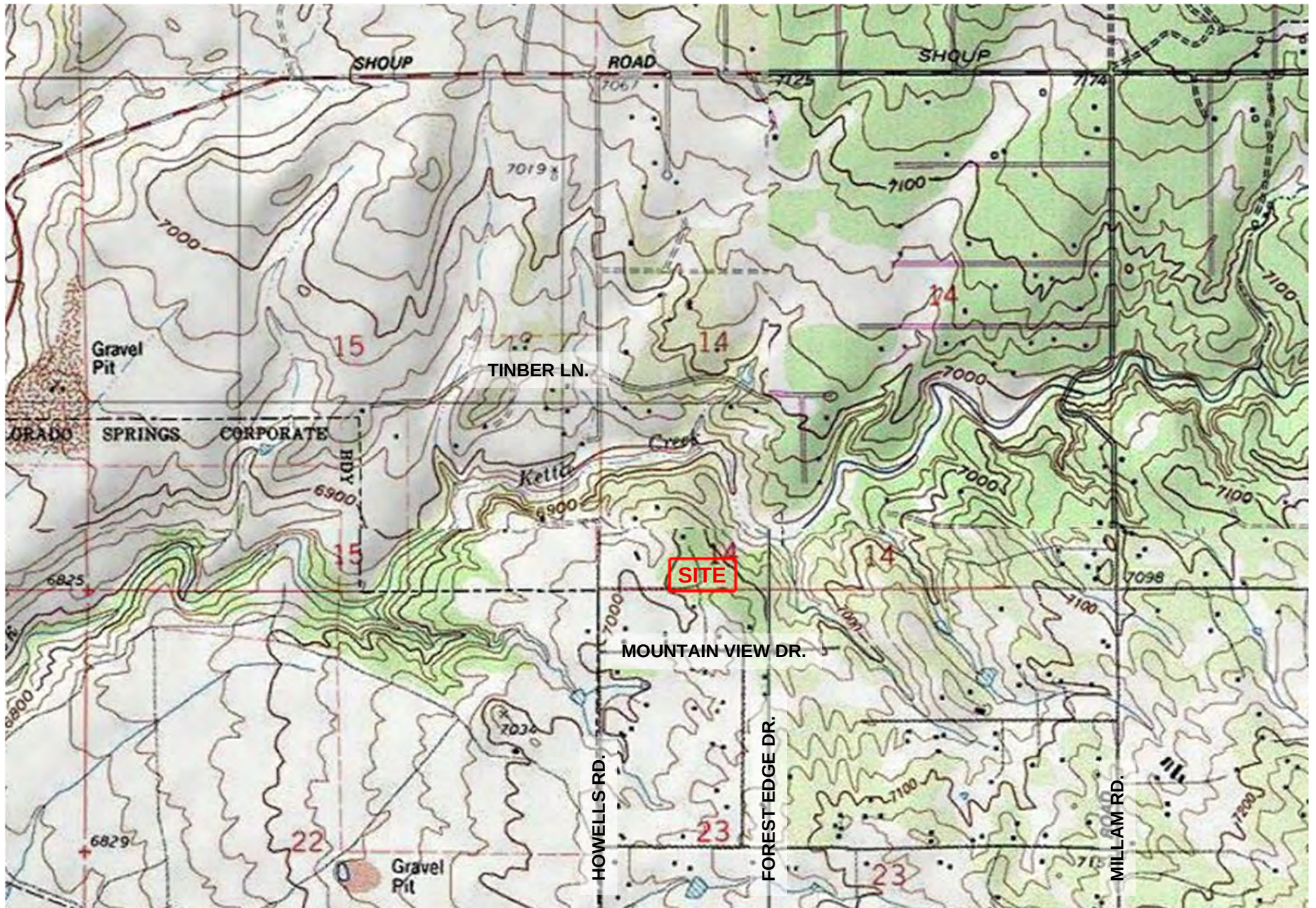
The Site is located in the southwest portion of the Black Forest, due east of northern Colorado Springs in El Paso County, Colorado. It is situated south of Kettle Creek, east of Howells Road, west of Milam Road and north of Mountain View Drive. It is adjacent to rural residential lots to the east and west. The Site is specifically located within the South 1/2 of the Southwest 1/4 of Section 14, Township 12 South, Range 66 West of the 6th P.M., El Paso County, Colorado (El Paso County Parcel 6214000112). The center of the Site is located at approximately Latitude 38.998754° north, Longitude -104.752782° west at an elevation of approximately 7,000 feet above mean sea level. Refer to Figure 1, USGS Site Location Map and Figure 2, Existing Conditions Aerial Photo.

1.3 Project Description

The property is currently unplatted, and the Applicant is seeking approval of a Zoning Change from RR-5 to RR-2.5 to create a subdivision. Upon approval of the Zoning Change, the Project will contain two single-family, residential lots, both of which will be 2.5 acres in size. The western lot will include an existing residence (11525 Howell Road). The eastern lot will include one new home, appurtenant structures, and a driveway similar in size and character as the existing home. Please refer to Figure 3, Site Plan provided by the Applicant (dated January 21, 2026) and the development application for specific details and descriptions of the Project.

Figure 1

USGS Site Location Map



SOURCE: United State Geological Survey (USGS)

Figure 2
Existing Conditions Aerial Photo



SOURCE: Google Earth (GE), Imagery Date: 3/2/2025

Figure 3
Site Plan

2.0 METHODOLOGY

ECOS performed an office assessment in which available databases, resources, literature and field guides on local flora and fauna were reviewed to gather background information on the environmental setting of the Site. We consulted several organizations, agencies, and their databases, including:

- Colorado Department of Agriculture (CDA) Noxious Weed List;
- Colorado Natural Heritage Program (CNHP);
- Colorado Energy & Carbon Management Commission (CECMC, previously COGCC) GIS Online;
- Colorado Parks and Wildlife (CPW);
- El Paso County Master Plan;
- El Paso County, Sub-Area Plan (provided by Client as applicable);
- Google Earth current and historic aerial imagery;
- Survey of Critical Biological Resources, El Paso County, Colorado;
- Survey of Critical Wetlands and Riparian Areas in El Paso and Pueblo Counties, Colorado;
- U.S. Department of Agriculture (USDA) PLANTS Database;
- U.S. Fish and Wildlife Service (USFWS) Region 6;
- USFWS IPaC database search;
- U.S. Geological Survey (USGS); and
- Site-specific background data provided by Guman and their consulting Team, including topographic base mapping, site development plans, and other data pertinent to the assessment.

Following the collection and review of existing data and background information, ECOS conducted a field assessment of the Site on November 12, 2025. The purpose of the assessment was to compare background information with present-day conditions, ascertain the physical/ecological characteristics and conditions of the Site, identify potential environmental opportunities and constraints associated with development improvements, and determine the presence/absence and approximate extent of the following features:

- Vegetation Communities, including weeds and noxious weeds;
- Natural landforms and natural features;
- Wildlife and their habitat, including:
 - Federal listed threatened and endangered species habitat regulated under the Endangered Species Act (ESA);
 - Migratory birds and raptors regulated under the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BEGPA)
- Wildland Fire Hazards

During the office and onsite assessment ECOS sketched and/or mapped the above features (as applicable) with a GPS on a topographic base map provided

by Guman and/or on a Google Earth aerial image of the Site. ECOS utilized GPS to document the boundaries/locations of significant natural features as deemed necessary. Representative photographs were taken to assist in describing and documenting Site conditions.

3.0 ENVIRONMENTAL SETTING

The Site is located in the Southwestern Tablelands Ecological Region (Chapman et al, 2006), which is primarily comprised of sub-humid grassland and semiarid rangeland. More specifically, the Site is located in the Pine-Oak Woodlands sub-region (26i), which is a dissected plain with dense oakbrush and deciduous oak woodlands combined with ponderosa pine woodlands. The southern portion is known locally as the Black Forest. Although woodlands dominate, the region is a mosaic of woodlands and grasslands. It is somewhat more dissected than the surrounding Foothill Grasslands (26j) ecoregion. The Pine-Oak Woodlands may be an outlier of the ponderosa pine woodlands found in the mid-elevation forests of the Southern Rockies (21) to the west. Soils are formed from weathered sandstone and shale with some outwash on uplands. Land use is woodland, wildlife habitat, and some rangeland. Areas of the region are rapidly urbanizing.

The Black Forest is unique in that it is the only place in Colorado where montane forest grows east of the Front Range and foothills. On vegetation maps, satellite images, and even from the summit of Pikes Peak, this extension of forest into the plains is very conspicuous. The flora and structure of this forest resembles that of the Black Hills in South Dakota, and the area contains many interesting disjunct species. Many of the plant species here are considered "woodland prairie relicts" which were once more common in Colorado and have diminished here due to climatic change. The Black Forest offers these species a refuge in which they can persist, widely disjunct from other populations of the same species. Long-term separation of populations of this sort can lead to allopatric speciation (the formation of new species via geographic isolation from parent populations), and for this and other reasons these disjunct populations are interesting and worthy of conservation attention. The Richardson alum-root (*Heucheria richardsonii*), prairie goldenrod (*Unamia alba*), birdfoot violet (*Viola pedatifida*), and Selkirk's violet (*V. selkirkii*) are all common elsewhere but rare in Colorado. Although no occurrences are present in this site, the gay feather (*Liatris ligulistylis*) is another species that is found in the Black Forest that falls into this category. It prefers open meadows in the Black Forest and appears to have diminished greatly there due to fire suppression and ecosystem transformation. One occurrence of the Southern Rocky Mountain cinquefoil was found during 2000.

The Site is not located within a Colorado Natural Heritage Program (CNHP) Potential Conservation Area (PCA) according to the CNHP database (CNHP, 2025). It is located approximately 0.55-mile west of the CNHP La Foret PCA, which is described as comprising B4 (Moderate Biodiversity Significance). It is also located 0.55-mile east of the CNHP Monument Creek PCA, which is described as comprising B2 (Very High Biodiversity Significance). No Critical Habitat, Wildlife Refuges or Hatcheries are present in the vicinity of the Site

according to the USFWS IPaC Trust Resources Report in Appendix C (USFWS, 2025a).

3.1 Topography / Natural Landform

The topography of the majority of the Site is relatively level, ranging from 6,980 to 7,026 feet above mean sea level (AMSL). However, the elevations in the east/northeast portion of the Site drop off significantly to the northeast toward a deep, offsite ravine (Kettle Creek escarpment) that drops approximately 80 feet to the bottom of the Kettle Creek valley. Overland drainage from precipitation generally flows northeast toward the offsite ravine and into Kettle Creek. Kettle Creek is an intermittent stream that flows into Monument Creek, then Fountain Creek, and then into the Arkansas River. Please refer to Figure 4 Topographic Exhibit, which illustrates a partial topographic survey of the proposed Lot 2 prepared by JR Engineering.

3.2 Soils

ECOS utilized the USDA, Natural Resource Conservation Service (NRCS) Web Soil Survey (USDA, NRCS, 2025) to determine the types of soils present and if hydric soils are present within the Site, as this data assist in informing the presence/absence of potential wetland habitat regulated under the Clean Water Act. Please refer to the Custom Soil Resource Report for the Site in Appendix A.

Pursuant to the Custom Soil Resource Report, the Site is comprised entirely of 41—Kettle gravelly loamy sand, 8 to 40 percent slopes. This soil is found on hills, and its parent material is sandy alluvium derived from arkose. It is somewhat excessively drained and the depth to water table is more than 80 inches. The frequency of flooding and ponding is none. The Kettle gravelly loamy sand is not hydric; however, the minor (less than 1%) inclusion of Pleasant soil is hydric. Please refer to Appendix A.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS, 1994) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in *Field Indicators of Hydric Soils in the United States* (USDA, NRCS, 2010).

3.3 Vegetation

3.3.1 Ponderosa Pine Forest

Approximately 50% of the Site is dominated by ponderosa pine (*Pinus ponderosa*) forest underlain by a thick layer of pine needle duff with occasional patches or individual kinnikinnick (*Arctostaphylos uva-ursi*), squaw current (*Ribes cereum*), Wood's rose (*Rosa woodsii*), snowberry (*Symphoricarpos* spp.), and mountain mahogany (*Cercocarpus montanus*) in the understory. Forest openings where sunlight penetrates the forest canopy that have less pine needle duff include occasional patches of chokecherry (*Prunus virginiana*), mountain mahogany and/or grasses and wildflowers. Grasses and wildflowers include: brome (*Bromus inermis*), blue grama (*Bouteloua gracilis*), western wheatgrass (*Agropyron smithii*), side-oats grama (*Bouteloua curtipendula*), needle-and-thread (*Stipa comata*), little bluestem (*Andropogon scoparium*), mountain muhly (*Muhlenbergia montana*), fringed sage (*Artemisia frigida*), golden bean (*Thermopsis rhombifolia*) and yucca (*Yucca glauca*).

3.3.2 Grassland-Ponderosa Pine Forest

Approximately 30% of the Site consists of grassland (species listed above) with an overstory of ponderosa pine. Ponderosa pine in this area has been thinned and managed by the existing home owner allowing more sunlight and grasses to grow, including a small patch of pine saplings.

3.3.3 Landscape and Managed Areas

The existing home is situated in the southwestern portion of the Site. Landscape and Managed Areas adjacent to the home make up approximately 20% of the Site. This area includes the existing home, irrigated lawn, shrubs, native trees, hardscape, and gravel and paved driveways. A section of this area consists of mowed native grassland.

Please refer to Figure 5, Vegetation Map.

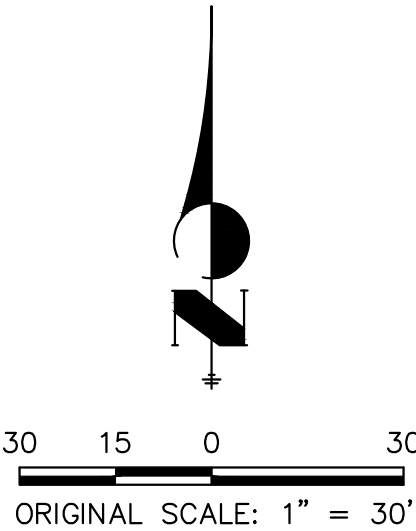
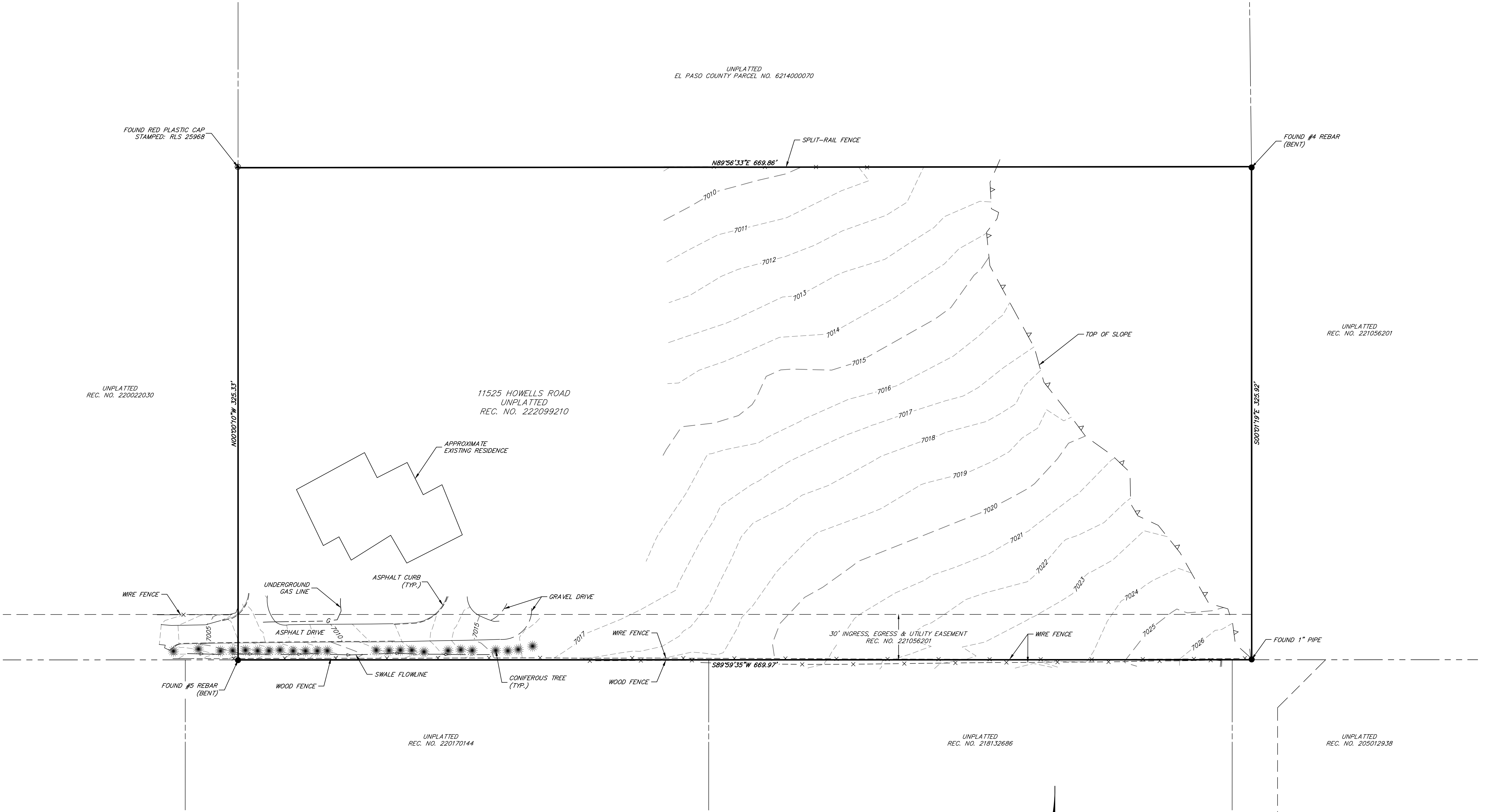
Figure 4

Topographic Exhibit

TOPOGRAPHIC EXHIBIT

11525 HOWELLS ROAD

LOCATED IN THE SOUTHWEST QUARTER OF SECTION 14, TOWNSHIP 12 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN
COUNTY OF EL PASO, STATE OF COLORADO

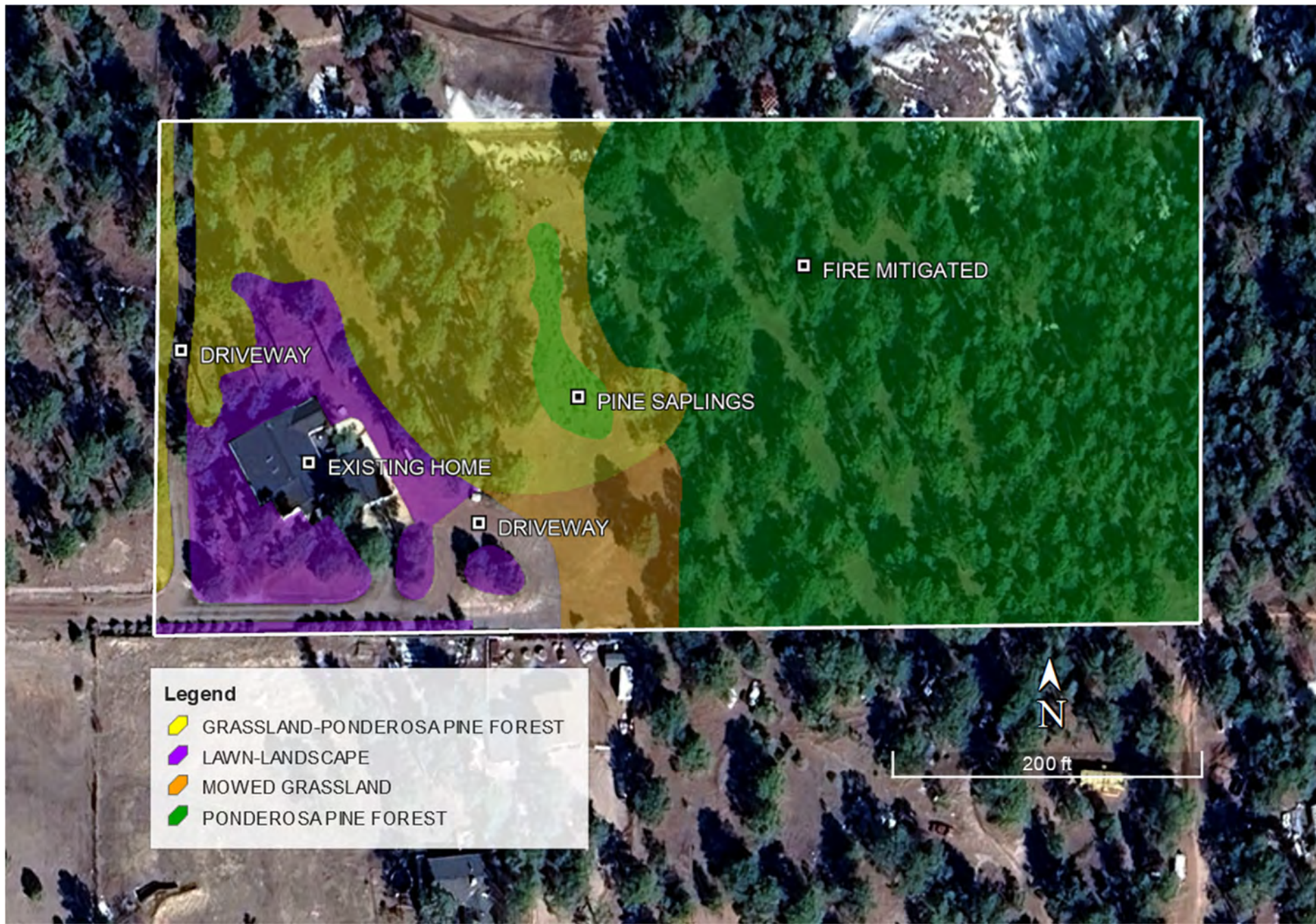


4						TOPOGRAPHIC EXHIBIT
3						11525 HOWELLS ROAD
2						COUNTY OF EL PASO
1						
NO.	REVISION		BY	DATE		
DWN. BY	SP		CHK. BY	DV		
SCALE	1"=30'		DATE	12/16/2025		
JOB NO.	25341.00		SHT.	1	OF 1	

**J-R ENGINEERING**
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

Figure 5

Vegetation Map



SOURCE: Colorado State Forest Service (CSFS), Wildfire Risk Public Viewer, accessed on 10/6/2025

3.4 Wetland Habitat and Waters of the U.S.

3.4.1 Methodology

ECOS utilized the USGS 7.5-minute topographic mapping, historic and current Google Earth aerial photography; the National Wetland Inventory (NWI) Wetlands Mapper (USFWS 2025) and the Colorado Wetland and Information Center – Wetlands Mapper (CNHP, 2025); and detailed Project topographic mapping (if available) to preliminarily identify potential wetland habitat and waters of the U.S. (WOTUS) on the Site. No WOTUS were found to be potentially present within the Site.

The mapping data above was proofed during the field assessment and a delineation was conducted to confirm the absence of potential WOTUS.

3.4.2 Office Assessment Findings

USGS Mapping: As referenced in *Section 3.1 Topography*, The Site is relatively level, ranging from 6,800 to 7,000 feet AMSL. The USGS mapping does not have accurate information for the east/northeastern portion of the Site given the dense canopy of pine. Refer to Figure 1, USGS Site Location Map.

Google Earth aerial imagery review: ECOS reviewed the Site using the time-lapse function in Google Earth (GE) to get a look back in time to 1985. In the imagery, it appears that the Site has remained relatively the same as it was in 1985.

CNHP National Wetland Inventory (NWI) Wetlands Mapper: The NWI Wetlands Mapper provides planning-scale identification of potential waters and wetlands (WOTUS), and illustrates that no WOTUS are potentially present within the Site. Refer to Figure 6, National Wetland Inventory Map.

CNHP Riparian Habitat Mapping: CNHP produces photo-interpreted mapping of riparian areas. That CNHP data shows no riparian habitat is potentially present within the Site. Refer to Figure 7, CNHP Riparian Habitat Map.

USDA NRCS Web Soil Survey: The custom soil report generated for the Site via the NRCS Web Soil Survey (USDA NRCS, 2025) does not identify the Kettle gravelly loamy sand that comprises the entire Site as hydric (wetland) soil. However, the minor (less than 1%) inclusion of Pleasant soil within the Kettle soil is hydric soil. Please refer to Appendix A.

3.4.3 Field Assessment Findings

The field assessment followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), *Interim Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Western Mountains, Valleys and Coast Region* (USACE, 2008), and the *Ordinary High Water Mark Identification Regulatory Guidance Letter* (USACE, 2005) for federal WOTUS; and Colorado House Bill 24-1379 (HB 24-1379) guidance for Waters of the State

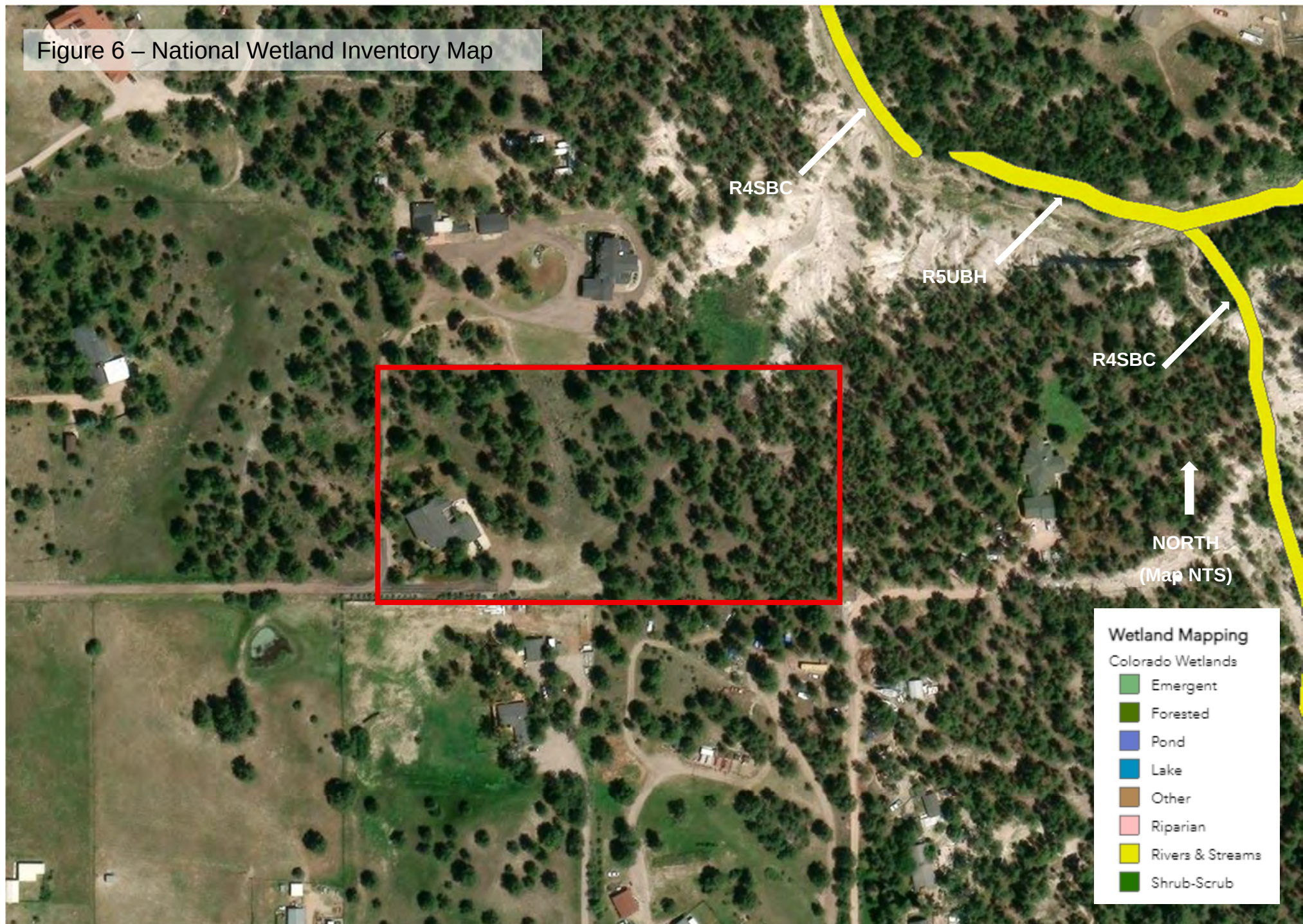
of Colorado (WOSC). The assessment verified that there are no Federal jurisdictional WOTUS or State jurisdictional features waterbodies or wetlands.

3.5 Riparian Habitat

The Colorado Wetland Information Center – Wetlands Mapper (CNHP, 2023) includes the option for illustrating potential riparian habitat based on mapping produced by Colorado Parks and Wildlife (CPW). Refer to Figure 7, CNHP Riparian Habitat Map. The CPW Riparian Habitat mapping indicates no riparian habitat is potentially present within the Site. During the field assessment ECOS found that the CNHP data is accurate. No riparian habitat is present on the Site.

Figure 6
National Wetland Inventory Map

Figure 6 – National Wetland Inventory Map



Source: Colorado Natural Heritage Program (CNHP) Wetland Mapper / U.S fish and Wildlife Service National Wetland Inventory (NWI)

FIGURE 7
CNHP Riparian Habitat Map

Figure 7 – CNHP Riparian Habitat Map



Source: Colorado Natural Heritage Program (CNHP) Wetland Mapper

3.5 Wildlife

The stated purpose and intent of the “El Paso County Development Standards” wildlife section is to ensure that proposed development is reviewed with consideration of the impacts to wildlife and wildlife habitat, and to implement the provisions of the Master Plan (El Paso County, 2021). The primary vegetation type within the Site is upland ponderosa pine forest. ECOS has determined that the wildlife impact potential for very low density development of this small Site is expected to be moderate to low. The Site currently provides moderate quality habitat for wildlife. Taken in a regional, watershed or larger landscape context, as more and more of the Black Forest is developed over time, impacts to wildlife and their behavior is expected to grow to moderate to high as wildlife run out of contiguous, unfragmented space and habitat.

The Site provides habitat for common wildlife species such as deer and black bear which have been reported on the Site by the current occupants. The Site provides foraging and breeding habitat for predators such as coyote and fox. The Site also provides good habitat for reptiles.

The Site contains no Critical Habitat, Wildlife Refuges or Hatcheries according to the USFWS IPaC Trust Resources Report (USFWS, 2025a) (Appendix C).

The Project proposes to subdivide the Site to create two 2.5-acre lots. A new home is proposed in the southwest corner of the new lot within a defined building envelope within upland ponderosa pine habitat.

Few noxious weeds were observed on the Site. To ensure that noxious weeds do not become problematic in the future after soil disturbances, residents should learn to identify and control them (hand pulling and disposal and/or herbicides) whenever and wherever observed.

4.0 FEDERAL LISTED SPECIES

A number of species that occur in El Paso County are listed as threatened and endangered (T&E) by the USFWS under the Endangered Species Act (ESA). ECOS compiled the data regarding T&E species for the Site in Table 1 based on the Site-specific, USFWS IPaC Trust Resources Report (USFWS, 2025a) we ran for the Project (Appendix C) and our onsite assessment. ECOS has provided our professional opinion regarding the probability that these species may occur within the Site and their probability of being impacted by the Project.

The likelihood that the Project would impact any of the species listed below is low to none. Most are not expected occur in the project area and no downstream impacts are expected. The USFWS IPaC Trust resource Report (Appendix C) states that there is no Critical Habitat for T&E species in the Site location.

TABLE 1 - FEDERAL LISTED SPECIES POTENTIALLY IMPACTED BY THE PROJECT			
Species	Status	Habitat Requirements and Presence	Probability of Impact by Project
BIRDS			
Eastern Black Rail (<i>Laterallus jamaicensis</i> ssp. <i>Jamaicensis</i>)	Threatened	Habitat includes tidally or non-tidally influenced marshes which range in salinity from salt to brackish to fresh. It requires dense overhead perennial herbaceous cover with underlying soils that are moist to saturated (occasionally dry) interspersed with or adjacent to very shallow water (typically ≤ 3 cm). Eastern black rails depend on this dense cover throughout their life cycle and is their primary strategy to avoid predation.	None. No wetland habitat is present on the Site.
Piping plover (<i>Charadrius melodus</i>)	Threatened	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.	None. The proposed project will not affect any of the listed river basins.
MAMMALS			

TABLE 1 - FEDERAL LISTED SPECIES POTENTIALLY IMPACTED BY THE PROJECT			
Species	Status	Habitat Requirements and Presence	Probability of Impact by Project
Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	Threatened	Inhabits well-developed riparian habitat with adjacent, relatively undisturbed grassland communities, and a nearby water source. Well-developed riparian habitat includes a dense combination of grasses, forbs and shrubs; a taller shrub and tree canopy may be present. It has been found to regularly use uplands up to 100 meters beyond the 100-year floodplain.	Low. Unlikely to occur on Site due to: 1) There are no drainages, wetland or riparian areas within the Site that provide a direct connection to Kettle Creek. Refer to Figure 7. 2) Only a very small portion of the northeast corner of the Site is within 300-feet of the centerline of Kettle creek (Refer to Figure 8 for the 300-foot PMJM Habitat Setback Map). 3) Onsite upland Ponderosa Pine forest habitat does not provide the constituent habitat elements of cover, food, shelter or hibernaculum.
INSECTS			

TABLE 1 - FEDERAL LISTED SPECIES POTENTIALLY IMPACTED BY THE PROJECT			
Species	Status	Habitat Requirements and Presence	Probability of Impact by Project
Monarch butterfly (<i>Danaus plexippus</i>)	Candidate (Proposed Threatened)	Multigenerational migrant that breeds throughout North America and overwinters in dense congregations in Mexican montane fir forests. The larval hostplant is milkweed (<i>Asclepias</i> spp.). Habitat includes areas with nectar for feeding and/or milkweed for laying eggs, especially grasslands and wetlands. Breeding habitat threats are widespread native grassland loss and herbicide use. In Colorado, they are present in low numbers from May to September.	Very Low. Milkweed is not present. Project impacts will be undetectable relative to threats across this species' huge range. Potential impacts could be mitigated by limiting herbicide use and planting native flowering species, especially milkweed along Kettle Creek.
Suckley's Cuckoo Bumble Bee <i>Bombus suckleyi</i> (<i>Bombus suckleyi</i>)	Candidate (Proposed Endangered)	This species is known to or is believed to occur in El Paso County, Colorado. This is one of the cuckoo bumble bees, a specialized lineage of bumble bees (subgenus <i>Psithyrus</i>) that has lost the ability to collect pollen and to rear their brood. These bees enter the nests of other bumble bee species, kill or subdue the queen of that colony, and forces (through aggression and pheromones) the workers to rear the offspring of the usurper. All of the resulting cuckoo bee offspring are reproductive and leave the colony to mate. It inhabits terrestrial Grassland/herbaceous, Shrubland/chaparral, Suburban/orchard, Forest - Conifer, Urban/edificarian habitat types. The habitats of its known host species, <i>Bombus occidentalis</i> , include open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows (NatureServe Explorer, 2025).	Very Low. Limited grassland habitat typically occupied by this bee's host species is present within this Ponderosa pine forested Site.
PLANTS			

TABLE 1 - FEDERAL LISTED SPECIES POTENTIALLY IMPACTED BY THE PROJECT			
Species	Status	Habitat Requirements and Presence	Probability of Impact by Project
Ute ladies'-tresses orchid (<i>Spiranthes diluvialis</i>)	Threatened	Primarily occurs along seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels or valleys, and lakeshores. May also occur along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside borrow pits, reservoirs, and other human-modified wetlands.	None. Wetland habitat will not be impacted. The Site elevation ranges from 6,980 to 7,026 feet AMSL, which is higher than the 6,500-foot upper elevation limit documented for the species and recommended for conducting surveys by the USFWS.

4.1 Preliminary Effects Determination

The USFWS IPaC Trust Resource Report (Appendix C) states that there is no Critical Habitat for T&E species in the Site. Based on the review of USFWS IPaC Trust Resources Report for the Project and our onsite assessment, it is ECOS' professional opinion that the likelihood that the Project would impact any of the species listed above in Table 1 is low to none. Most are not expected to occur in the Project area or on the Site; nor will they be affected by the indirect effects of the project as no downstream impacts to drainage basins supporting these T&E species are expected to affect them in offsite habitat. Therefore, ECOS' has preliminarily determined that the Project would have No Effect on any of the species listed above in Table 1.

PMJM: CPW data illustrate the southwestern 1/3 of the Site and a small area in the northeastern corner of the Site are located in Potentially Occupied PMJM Habitat. This data was not verified by CPW via trapping data or field verification. The patch of potentially occupied habitat illustrated by CPW that overlaps the southwestern 1/3 of the Site is associated with a completely different tributary to Kettle Creek, has no perennial drainages, no constituent elements required to support PMJM, and is well outside of the 300-foot setback (i.e., the current guidance provided by Rob Schorr, former USFWS PMJM Lead) from any reach of Kettle Creek, and therefore is without scientific merit. Refer to Figure 8 – PMJM Habitat Map showing the 300-foot PMJM Habitat Setback Map in the northeastern corner of the Site.

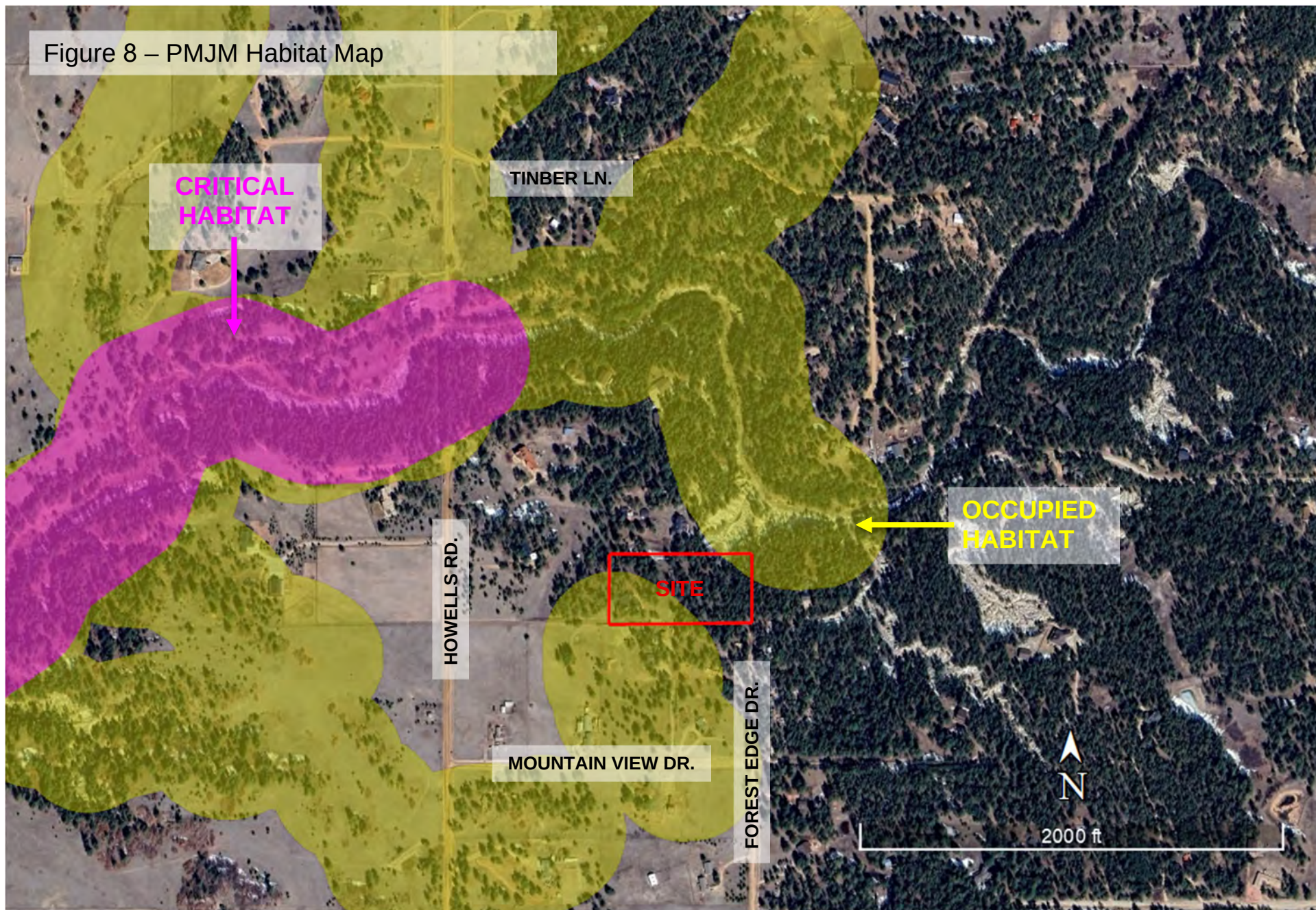
The very minor area of Secondary PMJM habitat in the northeastern corner of the Site that is within 300-feet of the centerline of Kettle Creek consists of ponderosa pine forest with no understory (mostly pine needle duff); and as such it does not support any of the life requisites of PMJM. No safe, well-covered, travel corridor exists between Kettle Creek and this northeastern corner of the Site, as they are linked by a barren ravine, the Kettle Creek escarpment. Refer to Photo Point 10 within Appendix B – Photo Location Map and Representative Photos.

4.2 USFWS Concerns Request

This report, including ECOS's Preliminary Effects Determination above, is going to be submitted to the USFWS to request an informal review of the Site and to obtain a letter of concerns, if any, including the need to initiate formal consultation under the ESA.

The Landowner intends to designate the steep slope area in the east/northeast portion of the Site, from the "Top of Slope" illustrated in Figure 4 to the northeast, as a "No Build Area". The No Build Area includes/contains the area of Secondary PMJM habitat in the northeastern corner of the Site that is within 300-feet of the centerline of Kettle Creek (Figure 9). Therefore, a larger Conservation Area is being dedicated as "No Build" to ensure there will be no effects to potential habitat of the PMJM from this Project.

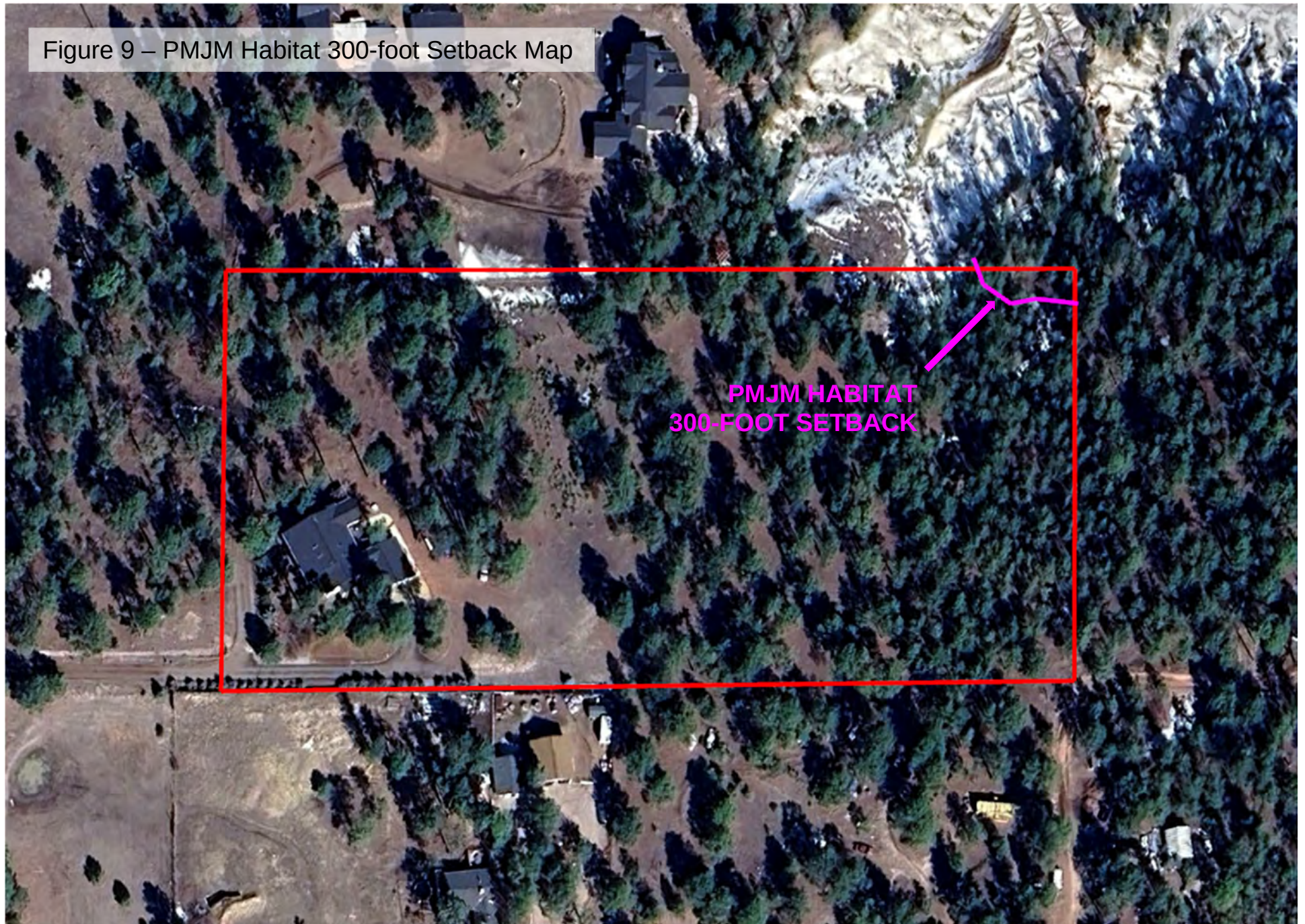
FIGURE 8
PMJM Habitat Map



SOURCE: United State Fish and Wildlife Services (USFWS), Critical and Occupied PMJM Habitat Data, 2010.

FIGURE 9
300-foot PMJM Habitat Setback Map

Figure 9 – PMJM Habitat 300-foot Setback Map



SOURCE: United State Fish and Wildlife Services (USFWS), Critical and Occupied PMJM Habitat Data, 2010.

5.0 RAPTORS AND MIGRATORY BIRDS

Raptors and most birds are protected by the Colorado Nongame Wildlife Regulations, as well as by the federal Migratory Bird Treaty Act. Additionally, eagles are protected by the Bald and Golden Eagle Protection Act (BGEPA).

5.1 CECMC Database

ECOS utilized the Colorado Energy & Carbon Management Commission (CECMC) GIS Online data (https://cogccmap.state.co.us/cogcc_gis_online/) (CECMC, 2025) to screen the Site for potential raptor nests. No raptor nests have been mapped within one mile of the Site (CECMC, 2025). The closest active raptor nest to the Site is a Peregrine Falcon nest 8.2-miles to the west of the Site.

5.2 USFWS IPaC Data

The USFWS IPaC data (Appendix C) regarding migratory birds and raptors lists birds of concern, including Birds of Conservation Concern (BCC) in the Project area, noting that this is not a comprehensive list of all birds found in the Project area. The IPaC data lists the following migratory birds and raptors in the Project area:

- Bald Eagles (*Haliaeetus leucocephalus*)
- Golden Eagles (*Aquila chrysaetos*) Broad-tailed Hummingbird (*Selasphorus platycercus*) - BCC
- Ferruginous Hawk (*Buteo regalis*)
- Grasshopper Sparrow (*Ammodramus savannarum perpallidus*)
- Lesser Yellowlegs (*Tringa flavipes*)
- Lewis's Woodpecker (*Melanerpes lewis*)
- Northern Harrier (*Circus hudsonius*)

5.3 Field Assessment

The ponderosa pine forest and managed areas adjacent to the existing home provide foraging habitat for transient migratory birds. No existing nest sites for birds or raptors, including prairie dog burrows potentially used by burrowing owl were observed during the Site visit.

6.0 SUMMARY OF IMPACTS

6.1 Vegetation

As described above, the majority of the Site (4.0 acres out of 5.0 total acres or 80% of the Site) consists of ponderosa pine forest and grassland with a ponderosa pine overstory. Refer to Figure 5, Vegetation Map and Appendix B, Photo Location Map and Representative Photos to better visualize the character of these plant communities.

The ponderosa pine forest will be the only vegetation/habitat type affected by the proposed home development on the eastern lot, as the existing driveway, gravel drive, and mown grassland will be utilized for access to the new home site.

The lot on the eastern half of the subdivision is planned to be low-density with one home, appurtenant structures, and a septic system. The new home will be sited within the western half of the lot where ponderosa pine has been thinned. Refer to Figure 3, Site Plan showing the home site area. Once a building envelope is defined by the owner and home builder it is expected to be limited in size and area to avoid disturbing the nativity of the Site. No structures will be sited in the eastern, steeper half of the lot. Use of the existing road, driveway, gravel drive and mown grassland for access to the new home site will limit development impacts to only to ponderosa pine forest. Linear infrastructure (e.g., water supply and electrical utilities) will follow existing and new roadways/driveways. Stormwater detention facilities are not required for individual home sites and no offsite impacts or discharges are planned in the onsite or offsite gullies that lead to Kettle Creek.

Soils in this region are gravelly, loamy sands and highly permeable which provide ideal conditions for implementing Low Impact Development (LID) systems and small-scale retention facilities that mimic natural processes that help infiltrate stormwater originating from rooftops and concrete. LID practices such as bioretention facilities, wetland swales, rain gardens, rain barrels and permeable pavements implemented at individual home sites are recommended to help improve water quality through groundwater infiltration and to reduce and delay the quantity and erosive power of stormwater discharging into the landscape.

Ground disturbance/removal of vegetation and exposure of soil instigates the invasion of common and noxious weeds, one of the most detrimental processes to the quality of any kind of habitat. As such, minimization of ground disturbing activities that compact or remove native vegetation during construction is recommended. Thereafter, control of common, noxious weeds, and non-native species in all areas (existing or landscaped) should be a priority during and after construction of the home site and as part of the long-term maintenance of the Site. If native vegetation is preserved and weeds are managed, the loss of the existing habitat is minimized.

Overall impacts to vegetation communities that provide habitat for wildlife can be offset/mitigated by thoughtful design; restrictions that minimize impacts to ponderosa pine forest and understory through the employment of clustered development within a reasonably sized and sited building envelope; implementation of native planting and seeding "landscape" requirements on private lots; and ongoing weed management.

6.3 Wetland Habitat and Waters

There are no WOTUS as regulated by the USACE under the CWA or Waters of the State of Colorado (WOSC) as regulated by the State of Colorado under HB 24-1379 within or immediately adjacent to the Site.

6.4 Wildlife

The impact to wildlife is similar to that for vegetation. Removal of ponderosa pine and introduction of human activity in any sort of open space would have an overall negative and landscape-scale impact on wildlife species. Ponderosa pine habitat within the eastern 2.5-acre lot will be the most impacted by development and therefore efforts should be made to limit development to a restricted building envelope within the southern quarter of the lot, preserving the northern quarter and eastern half for wildlife and aesthetic value. Weedy areas, if any, or those that may arise as a result of soil disturbance and grading should be managed to restore their health to improve their functional capacity to provide food, cover, and breeding habitat for all species that typically utilize these habitats to meet their life needs. Native landscaping around residential structures can benefit wildlife, especially small wildlife including insects, rodents and birds. Management priorities should include weed control and enhancement of existing native vegetation throughout the entire Site to enhance habitat and diversity, including native seeding in areas where forest thinning may be necessary for wildfire mitigation. Wildlife friendly fences that allow for small and large animals to travel freely through the Site should be used if fences are needed.

6.5 Federal Listed Species

The Site is not located within any officially designated critical habitat, but is located within an area CPW has mapped as potentially occupied habitat for PMJM, a federally designated T&E species. The CPW data illustrate the southwestern 1/3 of the Site and a very small area in the northeastern corner of the Site are located in Potentially Occupied PMJM Habitat. However, these data were not verified by CPW via trapping data or field verification. Primary PMJM habitat (i.e., wetland and riparian habitat) along Kettle Creek will not be impacted as they are not present within this Site. The CPW Occupied Habitat shown in the southwestern 1/3 of the Site does not contain suitable habitat for PMJM and is well outside of the 300-foot setback of any perennial creek in the area and therefore is without scientific merit. The very minor area of Secondary PMJM habitat in the northeastern corner of the Site that is within 300-feet of the centerline of Kettle Creek consists of ponderosa pine forest with no understory (mostly pine needle duff). This area does not support any of the life requisites of PMJM. No safe, well-covered, travel corridor exists between Kettle Creek and this northeastern corner of the Site as they are linked by a barren ravine. Refer to Figure 8 - PMJM Habitat Map, Figure 9 - 300-foot PMJM Habitat Setback Map, and representative photos in Appendix B.

The Landowner intends to designate the steep slope area in the east/northeast half of the Site as a “No Build” or conservation area. The No Build Area contains the area of potentially occupied PMJM habitat and will not affect potential habitat of the PMJM. Refer to the proposed building area on Figure 3 - Site Plan, Figure 8 - PMJM Habitat Map, and Figure 9 - 300-foot PMJM Habitat Setback Map.

The Site Plan reflects the measures that the Project Team took to avoid impacts to wildlife habitat. There will be no impacts to important habitat and therefore the Site Plan in this application meets the Least Environmentally Damaging and Practicable Alternative (LEDPA) requirements of both Federal and State law.

6.6 Raptors and Migratory Birds

The Project is expected to have a slightly positive impact on raptors and migratory birds. If the new home development site and defensive space for fire mitigation open up the forest canopy and are landscaped with native grasses and shrubs, the landscape will provide food, cover, nesting and hunting and foraging grounds for raptors and migratory birds. Thinning of ponderosa pine forest and removal of pine duff will also improve grassland and shrub diversity in areas that are currently covered and shaded by the forest canopy.

7.0 REGULATIONS AND RECOMMENDATIONS

7.1 Clean Water Act and Colorado HB 24-1379

Section 404 of the CWA and Colorado HB 24-1379 prohibit the discharge of dredged or fill material into federal or state jurisdictional waters and wetland habitat without a valid 404 permit or HB 24-1379 authorization. No federal or state jurisdictional waters and wetland habitat are present within the Site.

7.2 Endangered Species Act

The Site is not located within any officially designated critical habitat or known, occupied habitat for PMJM, a federally designated T&E species. A portion of the Site is located within an area CPW has mapped as “potentially occupied” habitat for PMJM. These data are not supported by trapping data or field verification by CPW. Regardless, the proposed subdivision or addition of one new home will not affect T&E species. Refer to Figure 3 – Site Plan and Figure 8 - PMJM Habitat Map.

This report including ECOS’s Preliminary Effects Determination (i.e., no impact/no effects) is going to be submitted to the USFWS for informal consultation under the ESA to seek concurrence with its findings or to obtain a letter of concerns, if any, including the need to initiate formal consultation under the ESA for PMJM.

Please note the following standard response from the USFWS in regard to ESA concurrence or clearance: *“If you (the project proponent) have determined that your project will have no effect to listed species or their habitat, or if suitable habitat for a listed species does not occur within your project area, you may not*

receive any further response or notification from us, as neither section 7 of the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C 1531 et seq.), nor implementing regulations under section 7 of the ESA, require us to review or concur with projects where “no effect” determinations have been made”. This means that the USFWS may or may not comment or concur with ECOS’ effects determination as documentation of ESA compliance, regardless of the Project being constructed, funded or permitted by a federal agency or requests for ESA concurrence by the County or FEMA.

7.3 Migratory Bird Treaty Act & Bald and Golden Eagle Protection Act

No raptor nests have been mapped within one mile of the Site; and the closest active raptor nest to the Site is a Golden Eagle nest 8.55-miles to the west/southwest of the Site (CECMC, 2025). No migratory bird or raptor nests were observed within the Site. Given the seasonal and transitory nature of migratory birds and raptors, ECOS recommends a nesting bird survey immediately prior to any construction activity to identify any new, occupied nests within the Site or within the CPW recommended buffers of the Site. Construction activities should be restricted during the breeding season near any occupied migratory bird or raptor nests.

8.0 REFERENCES

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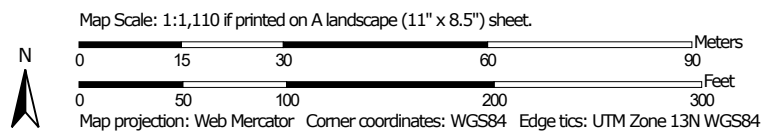
Appendix A

USDA Custom Soil Resource Report

Map Unit Name—El Paso County Area, Colorado
(Welsch Property)



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 Kettle gravelly loamy sand, 8 to 40 percent slopes

 Not rated or not available

Soil Rating Lines

 Kettle gravelly loamy sand, 8 to 40 percent slopes

 Not rated or not available

Soil Rating Points

 Kettle gravelly loamy sand, 8 to 40 percent slopes

 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 23, 2024—Aug 4, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Name

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
41	Kettle gravelly loamy sand, 8 to 40 percent slopes	Kettle gravelly loamy sand, 8 to 40 percent slopes	4.9	100.0%
Totals for Area of Interest			4.9	100.0%

Description

A soil map unit is a collection of soil areas or nonsoil areas (miscellaneous areas) delineated in a soil survey. Each map unit is given a name that uniquely identifies the unit in a particular soil survey area.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix B

Photo Location Map and Representative Photos

PHOTO LOCATION MAP
(Representative photos taken on 11/12/2025)

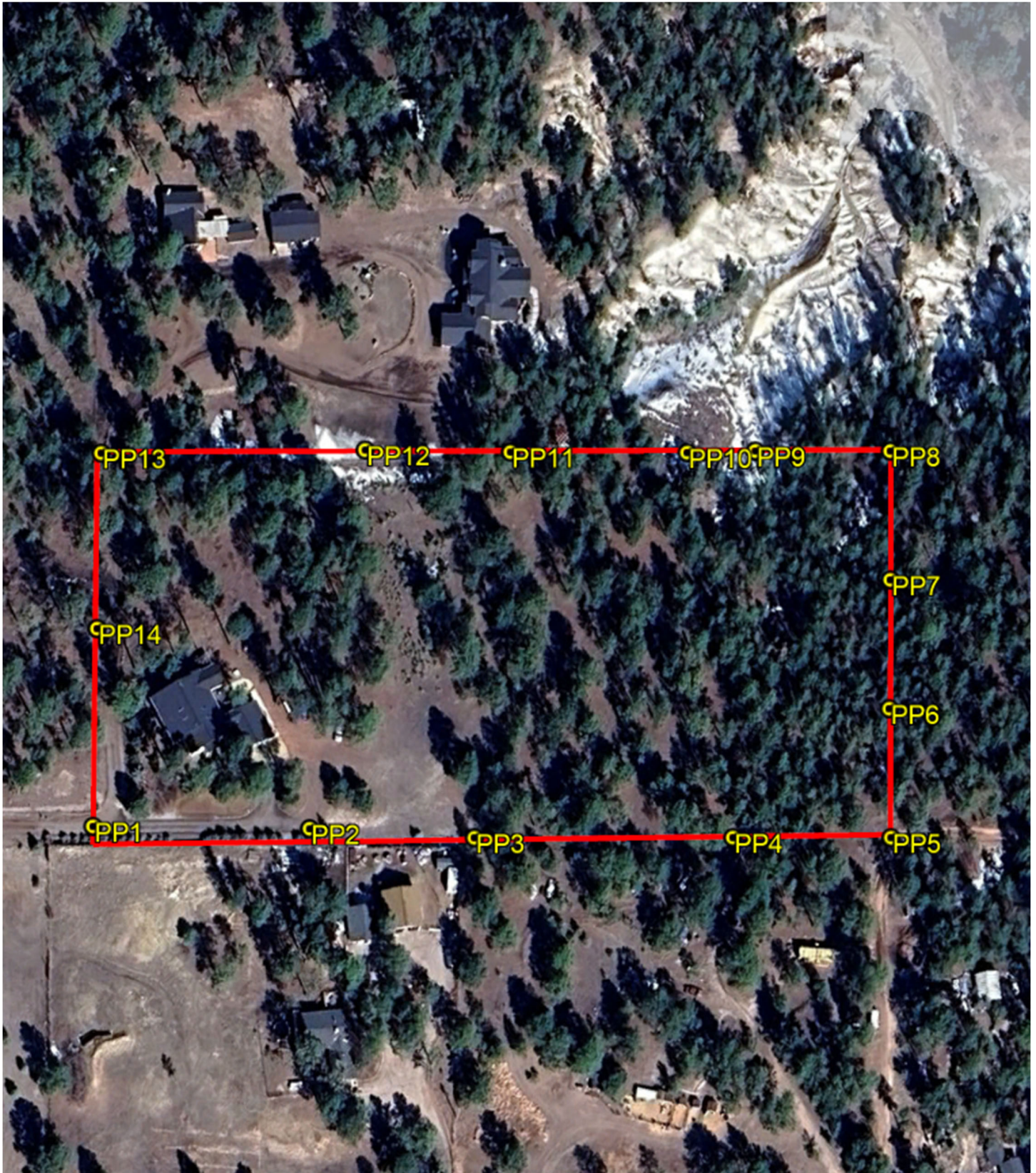




Photo Point 1 – View north of driveway, existing house, landscape area, and grassland-ponderosa pine forest.



Photo Point 1 – View east of driveway, existing house, and landscape area.



Photo Point 2 – View west of driveway, existing house, and landscape area from southwest property corner.



Photo Point 2 – View northwest of driveway, existing house, and landscape area from southwest property corner.

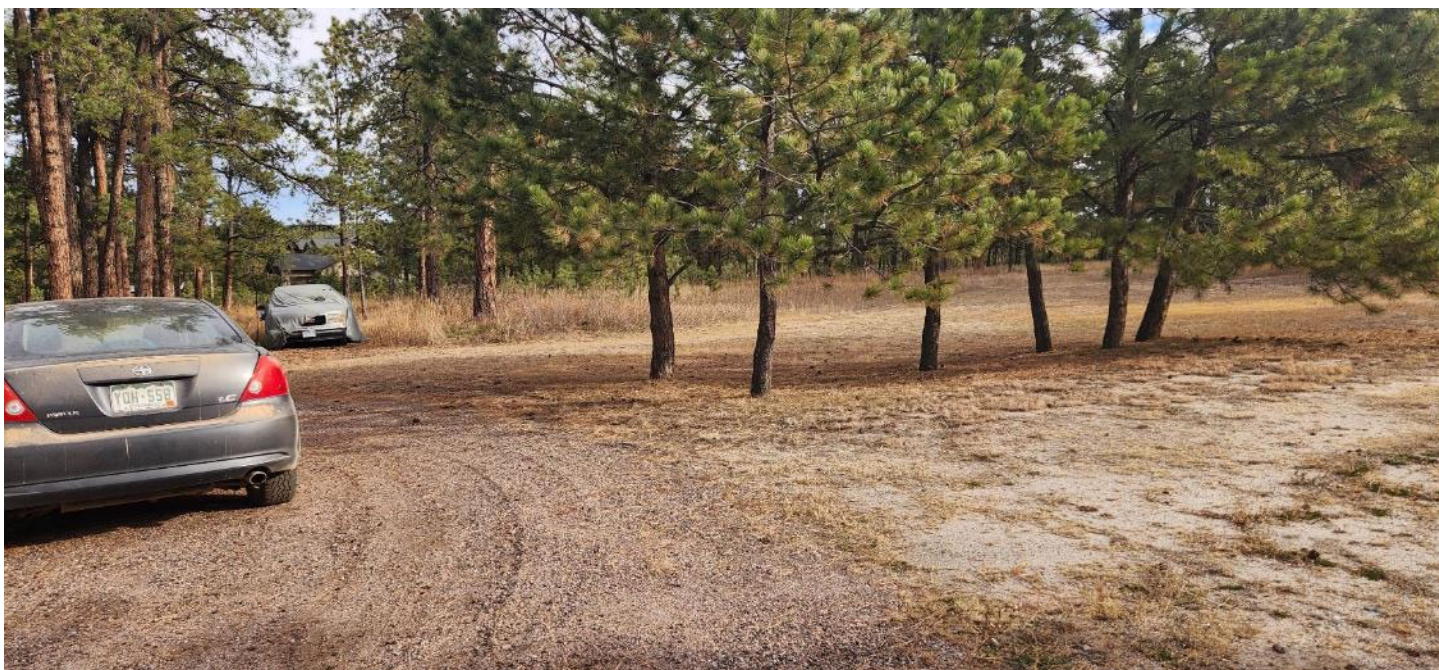


Photo Point 2 – View northeast of driveway and mowed grassland-ponderosa pine forest.

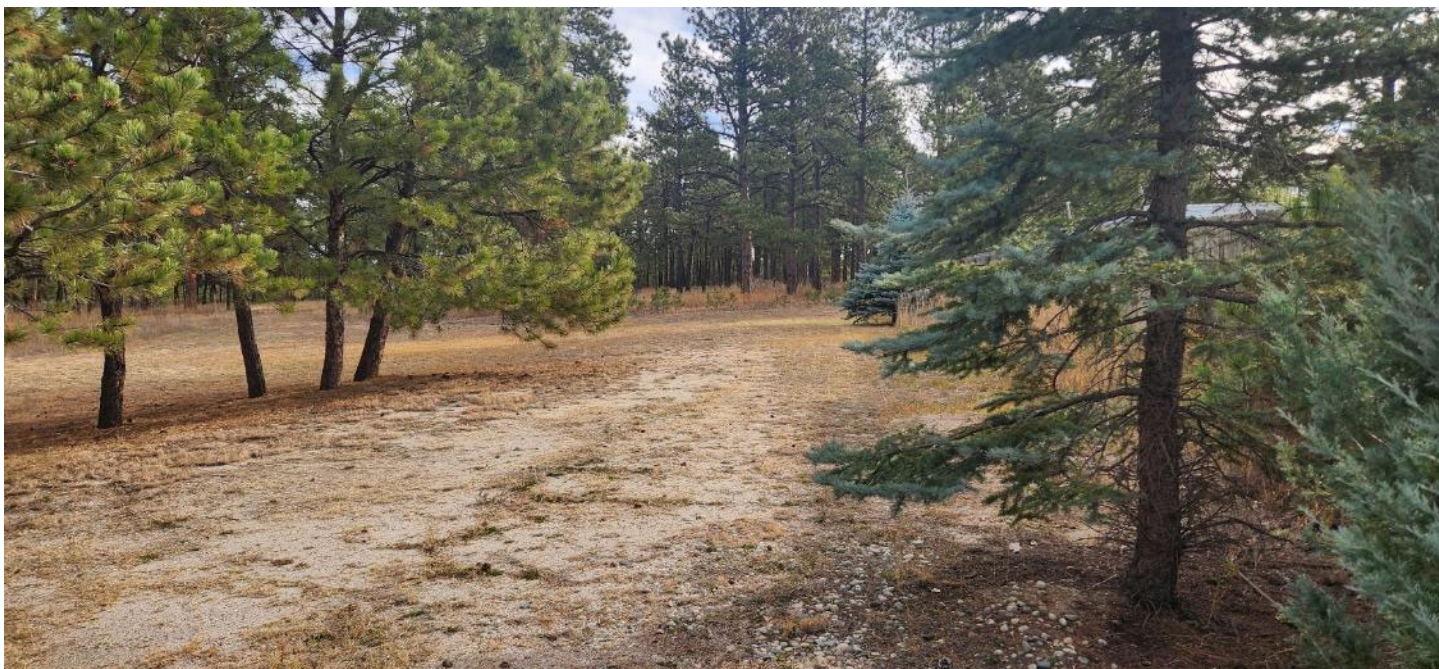


Photo Point 2 – View east of driveway and mowed grassland-ponderosa pine forest.



Photo Point 3 – View west of mowed grassland-ponderosa pine forest and existing house.



Photo Point 3 – View northwest of mowed grassland-ponderosa pine forest and ponderosa pine forest.



Photo Point 3 – View northeast of ponderosa pine forest.



Photo Point 3 – View east of ponderosa pine forest.



Photo Point 4 – View west of ponderosa pine forest.



Photo Point 4 – View northwest of ponderosa pine forest.



Photo Point 4 – View northeast of ponderosa pine forest.



Photo Point 4 – View east of ponderosa pine forest.



Photo Point 5 – View west of ponderosa pine forest from southeast property corner.



Photo Point 5 – View northwest of ponderosa pine forest from southeast property corner.



Photo Point 5 – View north of ponderosa pine forest from southeast property corner.



Photo Point 6 – View south of ponderosa pine forest.



Photo Point 6 – View southwest of ponderosa pine forest.



Photo Point 6 – View northwest of ponderosa pine forest.



Photo Point 6 – View north of ponderosa pine forest.



Photo Point 7 – View south of ponderosa pine forest.



Photo Point 7 – View southwest of ponderosa pine forest.



Photo Point 7 – View northwest of ponderosa pine forest.



Photo Point 7 – View north of ponderosa pine forest toward Kettle Creek and PMJM Habitat 300-foot setback.

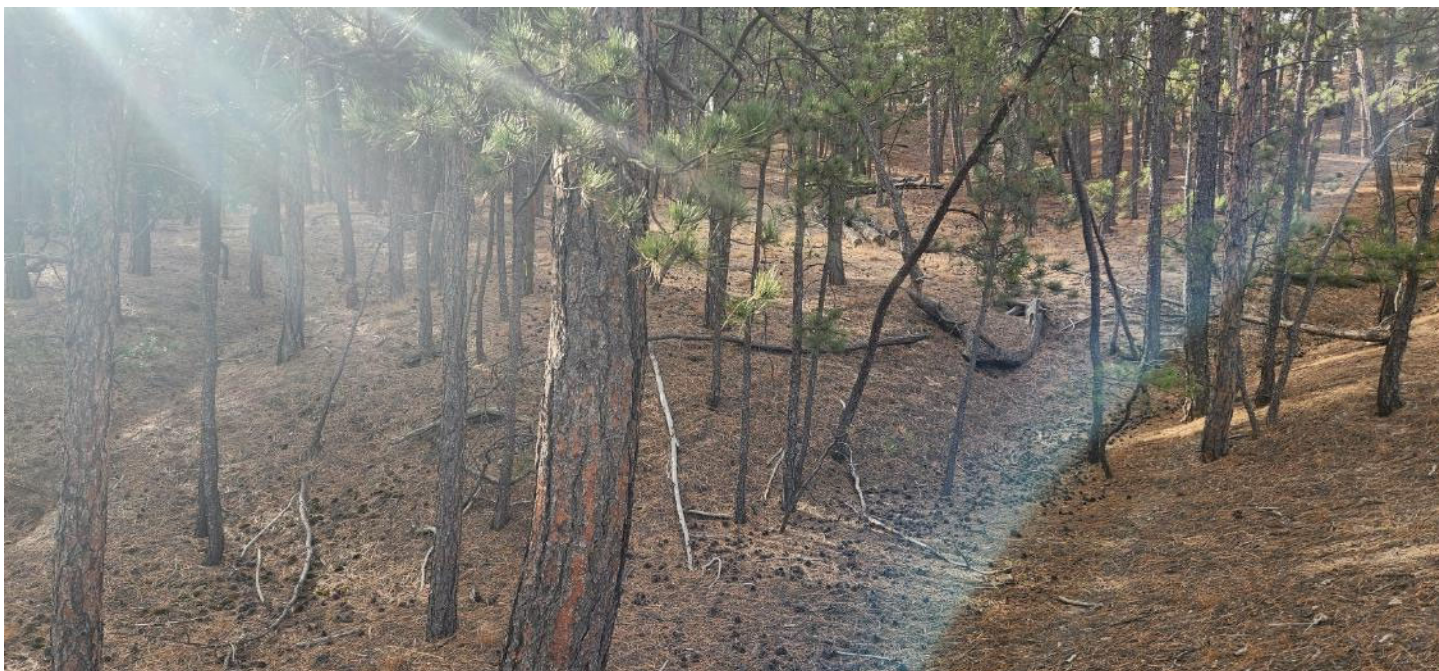


Photo Point 8 – View south of ponderosa pine forest from within PMJM Habitat 300-foot setback.



Photo Point 8 – View west of ponderosa pine forest and Kettle Creek escarpment from within PMJM Habitat 300-foot setback.



Photo Point 9 – View east of ponderosa pine forest and Kettle Creek escarpment toward PMJM Habitat 300-foot setback.



Photo Point 9 – View southeast of ponderosa pine forest above Kettle Creek escarpment.



Photo Point 9 – View southwest of ponderosa pine forest above Kettle Creek escarpment.



Photo Point 9 – View west of ponderosa pine forest above Kettle Creek escarpment.



Photo Point 10 – View southeast (onsite) of ponderosa pine forest above Kettle Creek escarpment.



Photo Point 10 – View southeast (onsite) of ponderosa pine forest above Kettle Creek escarpment.



Photo Point 10 – View southwest (onsite) of ponderosa pine forest above Kettle Creek escarpment.



Photo Point 10 – View west (onsite) of ponderosa pine forest above Kettle Creek escarpment.



Photo Point 10 – View northwest (offsite) of ponderosa pine forest and adjacent developed parcel.



Photo Point 10 – View north (offsite) of adjacent developed parcel, ponderosa pine forest, and Kettle Creek valley.



Photo Point 10 – View northeast (offsite) of Kettle Creek escarpment and valley.



Photo Point 10 – View east (offsite) of Kettle Creek escarpment and valley.



Photo Point 11 – View east of ponderosa pine forest above Kettle Creek escarpment.



Photo Point 11 – View southeast of ponderosa pine forest.



Photo Point 11 – View southwest of ponderosa pine forest.



Photo Point 11 – View west of ponderosa pine forest.



Photo Point 12 – View east of ponderosa pine forest adjacent to developed parcel (left).



Photo Point 12 – View southeast of ponderosa pine forest adjacent to developed parcel (left).



Photo Point 12 – View southwest of grassland-ponderosa pine forest and existing home.



Photo Point 12 – View west of grassland-ponderosa pine forest and existing home.



Photo Point 13 – View east of grassland-ponderosa pine forest and existing home from northwest property corner.



Photo Point 13 – View southeast of grassland-ponderosa pine forest and existing home from northwest property corner.



Photo Point 13 – View south of driveway, grassland-ponderosa pine forest and existing home from northwest property corner.



Photo Point 14 – View north of existing grassland-ponderosa pine forest adjacent to existing driveway and home.



Photo Point 14 – View northeast of existing grassland-ponderosa pine forest adjacent to existing driveway and home.



Photo Point 14 – View southeast of existing grassland-ponderosa pine forest adjacent to existing driveway and home.



Photo Point 14 – View south of existing grassland-ponderosa pine forest adjacent to existing driveway and home.

Appendix C

USFWS IPaC Trust Resource Report

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

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](#).

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

Birds

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover <i>Charadrius melodus</i> 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. There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> 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	Proposed Threatened
Suckley's Cuckoo Bumble Bee <i>Bombus suckleyi</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10885	Proposed Endangered

Flowering Plants

NAME	STATUS
Ute Ladies'-tresses <i>Spiranthes diluvialis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2159	Threatened

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-incidental-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 <i>Haliaeetus leucocephalus</i> 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	Breeds Oct 15 to Jul 31
Golden Eagle <i>Aquila chrysaetos</i> 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	Breeds Dec 1 to Aug 31

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.

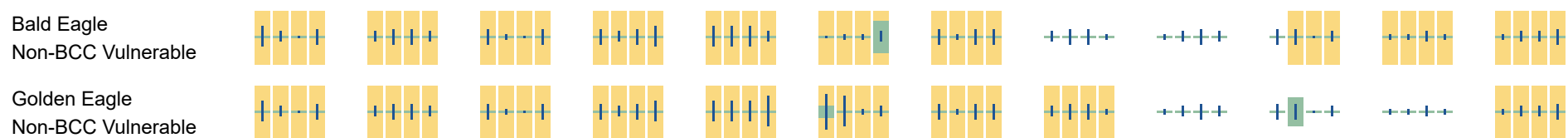
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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).

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
Bald Eagle <i>Haliaeetus leucocephalus</i> 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	Breeds Oct 15 to Jul 31
Broad-tailed Hummingbird <i>Selasphorus platycercus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 25 to Aug 21
Ferruginous Hawk <i>Buteo regalis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6038	Breeds Mar 15 to Aug 15
Golden Eagle <i>Aquila chrysaetos</i> 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	Breeds Dec 1 to Aug 31
Grasshopper Sparrow <i>Ammodramus savannarum perpallidus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Lewis's Woodpecker <i>Melanerpes lewis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Northern Harrier <i>Circus hudsonius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350	Breeds Apr 1 to Sep 15

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 (I)

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.

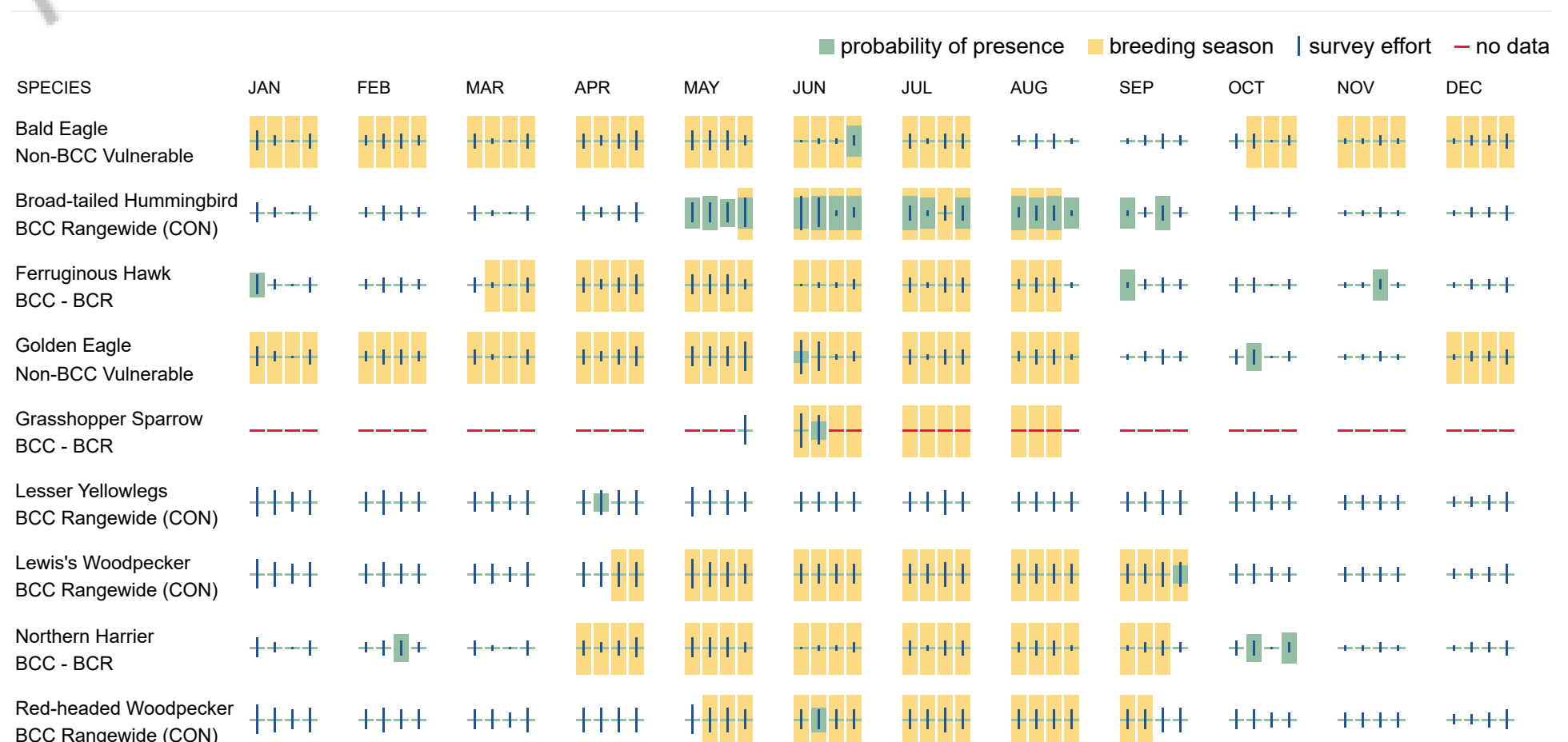
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



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](#).

This location did not intersect any wetlands mapped by NWI.

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