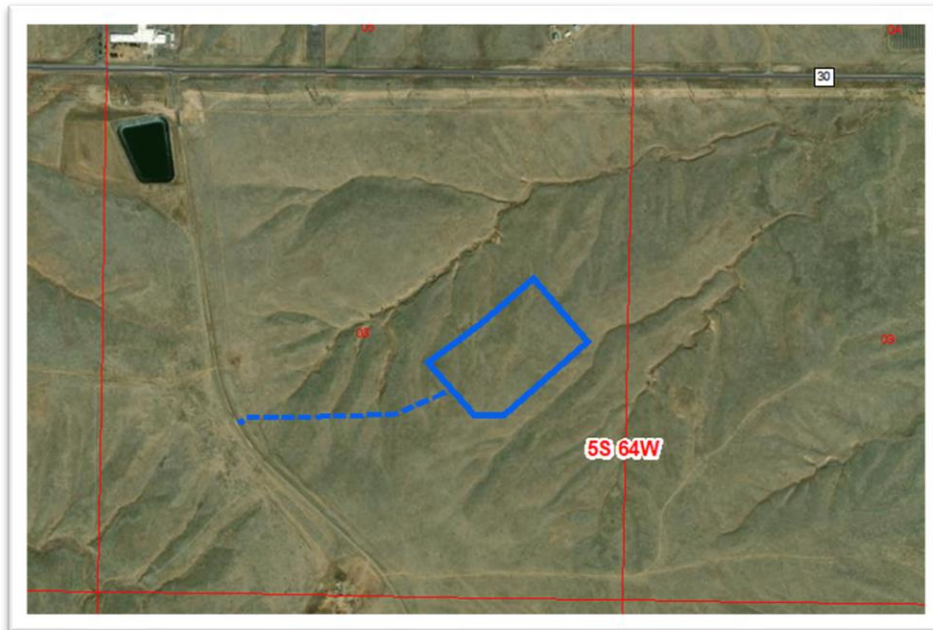




**Crestone Peak Resources Operating, LLC  
State Harvard/Yale - Proposed Well Pad and Access Road  
Wildlife Mitigation Plan  
Arapahoe County, Colorado  
August 28, 2024**



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The following table describes acronyms and abbreviations that are used throughout this report.

<b>Acronym</b>	<b>Meaning</b>
BMP	Best management practices
CPW	Colorado Parks and Wildlife
CVCP	Colorado Vegetation Classification Project
ECMC	Energy and Carbon Management Commission
FEMA	Federal Emergency Management Agency
HPH	High Priority Habitat (CPW)
HWA	HWA Wildlife Consulting, LLC
Max Disturbance	The maximum disturbance for the well pad
NHD	National Hydrology Dataset (USGS)
NWI	National Wetland Inventory (USFWS)
OHW	Ordinary high water mark
Project Site	The maximum disturbance for the well pad and access road
T&E	Threatened and endangered species (USFWS)
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WPS	Working pad surface (pad disturbance area during development)



## 1. Introduction

Crestone Peak Resources Operating, LLC (wholly owned subsidiary of Civitas Resources, Inc.; hereafter referred to as “Crestone” or “the Operator”) is developing oil and gas resources within Arapahoe County, Colorado. HWA Wildlife Consulting, LLC (HWA) completed a wildlife mitigation plan for the proposed State Harvard/Yale well pad and access road (project site) in 2024. This effort included a desktop analysis using online resources and field data collected by HWA within the Lowry Project Area (LPA; encompasses the entire project site) during ground surveys in 2012-2015 and 2017-2023 (HWA 2012, 2013, 2014, 2015, 2017, 2018, 2019, 2020, 2021, 2022, 2023). The LPA ground surveys included:

- Amphibians – Visual encounter surveys in wetlands (hydric habitat mapped during surveys) within the LPA during 2012-2015 and 2018.
- Black-tailed prairie dogs (*Cynomys ludovicianus*) – Colony delineation, re-mapping, and activity status within the LPA during 2012, 2013, 2019, 2020, 2022, and 2023.
- Burrowing owls (*Athene cunicularia*) – Nest searches and productivity surveys within the LPA during 2013-2015 and 2017-2024.
- Butterflies – Butterfly transect surveys within the LPA during 2018.
- Migratory birds – Bird point counts within the LPA during 2018.
- Pollinators – Pollinator inventory (deployed pollinator traps) within the LPA during 2018.
- Preble’s meadow jumping mice (*Zapus hudsonius preblei*) – Live-trap mouse surveys within the Box Elder and Coal Creek drainages during 2013.
- Raptors – Nest searches and productivity surveys within the LPA during 2012-2015, 2017-2019, and 2021-2024.
- Swift fox (*Vulpes velox*) – Camera scent station surveys within the LPA during 2019-2023.

In addition to the LPA ground surveys listed above, HWA mapped potential riparian habitat located in or within 1,000 feet of the project site on November 29 and 30, 2023 and surveyed for raptor nests, including burrowing owl nests, in or within 0.5 miles of the project site on May 7 and June 11, 2024.

This wildlife mitigation plan focuses on wildlife and plant species of management concern to the Bureau of Land Management-Royal Gorge Field Office (BLM-RGFO), Colorado Parks and Wildlife (CPW), Colorado State Land Board, Arapahoe County, Energy and Carbon Management Commission (ECMC; formerly referred to as the COGCC), and the U.S. Fish and Wildlife Service (USFWS), within and around the project site (Figures 1-4). This plan addresses the ECMC’s updated rules pursuant to 304.c.(17), 1201, 1202, and 1203 (if applicable) for oil and gas locations (ECMC 2021a, 2021b).

## 2. Project Site

The project site is located in Section 8 T5S:R64W (Figures 1-4). Project site refers to the maximum disturbance area for the well pad and access road. Max disturbance refers to the maximum disturbance for the well pad. Working pad surface refers to the pad disturbance area during development. The maximum disturbance for the well pad is 26.36 acres. The access road is approximately 2,164 feet in length. The well pad is located approximately 0.4 miles south of



East Quincy Avenue Road. The habitat within the project site consists of shortgrass and tallgrass prairie habitat.

### 3. Operating Requirements

This section covers the ECMC's operating requirements for oil and gas operations. This section also covers additional Operator Best Management Practices (BMPs) that Crestone has committed to. This section covers the well pad and access road. This section does not cover flowlines or pipelines (permitted separately).

#### Energy and Carbon Management Commission (ECMC) – Operating Requirements

The ECMC's operating requirements, described in Rule 1202, are listed below (*italic text*), as well as the Operator's plans to address each applicable requirement (**bold text**):

a) *The operating requirements identified in this Rule 1202.a apply to Oil and Gas Operations statewide unless the Operator obtains a signed waiver from CPW and the Director or Commission approves a Form 4, Sundry Notice or Form 2A documenting the relief.*

1) *In black bear habitat, Operators will install and utilize bear-proof dumpsters and trash receptacles for food-related trash at all facilities that generate trash.*

**The project site is not located within black bear habitat.**

2) *Operators will disinfect water suction hoses and water transportation Tanks withdrawing from or discharging into surface waters (other than contained Pits) used previously in another river, intermittent or perennial stream, lake, pond, or wetland and discard rinse water in an approved disposal facility. Disinfection practices will be repeated prior to completing work and before moving to the next water body. Disinfection will be performed by scrubbing and pre-rinsing equipment away from water bodies to remove all mud, plants, and organic materials and then by implementing one of the following practices:*

A) *Spray/soak equipment with a CPW-approved disinfectant solution capable of killing whirling disease spores and other aquatic nuisance species defined by CPW; or*

B) *Spray/soak equipment with water greater than 140° Fahrenheit for at least 10 minutes. All equipment and any compartments they contain will be completely drained and dried between each use.*

**Water for this project will be sourced from a third-party one-way lay flat distribution system, which is permitted and operated separately by a third party. Water is treated prior to use in downhole operations.**

3) *At new and existing Oil and Gas Locations, Operators will not situate new staging, refueling, or Chemical storage areas within 500 feet of the Ordinary High Water Mark ("OHWM") of any river, perennial or intermittent stream, lake, pond, or wetland.*



**No ordinary high water mark (OHWM) of any river, perennial or intermittent stream, lake, pond, or wetland occurs within 500 feet of the project site.**

- 4) *To prevent access by wildlife, including birds and bats, Operators will fence and net or install other CPW-approved exclusion devices on new Drilling Pits, Production Pits, and other Pits associated with Oil and Gas Operations that are intended to contain Fluids.*
  - A) *Such fencing and netting or other CPW-approved exclusion device will be installed within 5 days after the cessation of active drilling and completion activities and maintained until the Pit is removed from service and dried or closed pursuant to the Commission's 900 Series Rules.*
  - B) *The Director may require an operator to fence and net or install other CPW-approved exclusion devices on an existing Pit if the Director determines that the installation is necessary and reasonable to protect Wildlife Resources based on the analysis required by Rule 909.j, or other information that demonstrates additional protections for Wildlife Resources are appropriate.*
  - C) *Operators will properly maintain and repair all fences, nets, and CPW-approved exclusion devices required by this Rule 1202.a.(4).*

**The project site will not include drilling pits, production pits, or other pits associated with oil and gas operations.**

- 5) *For trenches that are left open for more than 5 consecutive days during construction of Pipelines regulated pursuant to the Commission's 1100 Series Rules, Operators will install wildlife escape ramps at a minimum of one ramp per 1/4 mile of trench.*

**If a trench is left open for more than 5 consecutive days during pipeline construction, the Operator will install wildlife escape ramps at a minimum of one ramp per 0.25 miles of trench.**

- 6) *When conducting interim and final Reclamation pursuant to Rules 1003 and 1004, Operators will use CPW-recommended seed mixes for Reclamation when consistent with the Surface Owner's approval and any local soil conservation district requirements.*

**The surface owner (the Colorado State Land Board) has provided a preferred seed mix for reclamation within the LPA. This preferred seed mix will be used for reclamation.**

- 7) *Operators will use CPW-recommended fence designs when consistent with the Surface Owner's approval and any Relevant Local Government requirements.*

**Fence designs will be wildlife friendly. Fence designs will include a smooth bottom wire (20 inches in height from the ground), two barbed wires in the middle (≥12 inches**



**from the smooth top wire), and a smooth top wire ( $\leq 42$  inches in height from the ground).**

- 8) *Operators will conduct all vegetation removal necessary for Oil and Gas Operations outside of the nesting season for migratory birds (April 1 to August 31). For any vegetation removal that must be scheduled between April 1 to August 31, Operations may implement appropriate hazing or other exclusion measures prior to April 1 to avoid take of migratory birds. If hazing or other exclusion measures are not implemented. Operators will conduct pre-construction nesting migratory bird surveys within the approved disturbance area prior to any vegetation removal during the nesting season. If active nests are located, Operators will provide work zone buffers around active nests.*

**If vegetation removal occurs during the breeding season (April 1 to August 31), the Operator will conduct migratory bird nest surveys no later than two weeks before construction. If nests are located, the Operator will implement nest protection BMPs. These BMPs will include the appropriate species specific (varies by bird species) work zone buffers around the nest.**

- 9) *Operators will treat Drilling Pits, Production Pits, and any other Pit associated with Oil and Gas Operations containing water that provides a medium for breeding mosquitoes with Bti (*Bacillus thuringiensis v. israelensis*) or take other effective action to control mosquito larvae that may spread West Nile virus to Wildlife Resources. Such treatment will be conducted in a manner which will not adversely affect aquatic Wildlife Resources.*

**The project site will not include drilling pits, production pits, or other pits associated with oil and gas operations.**

- 10) *Operators will employ the following minimum Best Management Practices on new Oil and Gas Locations with a Working Pad Surface located between 500 feet and 1000 feet hydraulically upgradient from a High Priority Habitat identified in Rule 1202.c.(1).Q–S:*
- A) *Contain Flowback and Stimulation Fluids in Tanks that are placed on a Working Pad Surface in an area with downgradient perimeter berming;*
  - B) *Construct lined berms or other lined containment devices pursuant to Rule 603.o around any new crude oil, condensate, and produced water storage Tanks that are installed after January 15, 2021;*
  - C) *Inspect the Oil and Location on a daily basis, unless the approved Form 2A provides for different inspection frequency or alternative method of compliance;*
  - D) *Maintain adequate Spill response equipment at the Oil and Gas Location during drilling and completion operations; and*



*E) Not construct or utilize any Pits, except that Operators may continue to utilize existing Pits that were properly permitted, constructed, operated, and maintained in compliance prior to January 15, 2021.*

**The project site is not located between 500 feet and 1,000 feet hydraulically upgradient from any High Priority Habitat (HPH) identified in Rule 1202.c.(1).Q-S. The project site is located >1,000 feet from the OHWM of Box Elder Creek and >500 feet from the Aquatic Native Species Conservation Waters HPH boundary.**

*b) Operators will bore, rather than trench, Flowline and utility crossings of perennial streams identified as aquatic High Priority Habitat unless the Operator obtains a signed waiver from CPW and the Director or Commission approves a Form 4 or Form 2A documenting the relief. When installing culverts or bridges, such structures will not impact or prevent the passage of fish unless otherwise directed by CPW.*

**Associated flowlines and utility lines will not occur within any perennial streams identified as aquatic HPH. There are no culverts or bridges in the current project designs that occur within potential fish habitat.**

*Rules 1202.c and 1202.d describe operating requirements for proposed Oil and Gas Operations that are located within High Priority Habitats.*

**Pronghorn Winter Concentration Area HPH occurs within the project site. After consultation with CPW, CPW provided the following direct and indirect impact options to offset impacts to wildlife resources:**

#### **Direct Impacts**

- **Mitigating via a 29.74-acre CPW-approved project or paying CPW \$50,085.30 to offset Civitas's direct impact on wintering pronghorn.**

**Crestone has agreed to pay these direct impact fees no less than 30 days prior to submitting a Form 42 (per Rule 1203.c).**

#### **Indirect Impacts**

- **Should site pad construction, drilling, and/or completions occur OUTSIDE (May 1 to Dec. 31) of the Pronghorn Winter Concentration Area season, Civitas should either develop a CPW-approved mitigation project for 63.55 acres or pay CPW \$46,709.25 to offset Civitas's indirect impact from this proposed location.**
- **Should site pad construction, drilling, and/or completions occur INSIDE (Jan. 1 to April 30) of the Pronghorn Winter Concentration Area season, Civitas should either develop a CPW-approved mitigation project for 111.21 acres or pay CPW \$81,741.19 to offset Civitas's indirect impact from this proposed location.**

**Crestone has agreed to pay these indirect impact fees no less than 30 days prior to submitting a Form 42 (per Rule 1203.c). As of this writing, operations are scheduled to overlap the pronghorn winter season (Jan. 1 - April 30); therefore, Crestone will pay the higher indirect**



impact fee (\$81,741.19). Should the schedule change to allow all three phases of development to occur outside the Jan. 1 - April 30 timeframe, Crestone will pay the lower indirect impact fee (\$46,709.25). The current schedule (which could change) for the three phases of development include: construction occurring during quarter 2, 2025, drilling occurring during quarters 2 and 3, 2025, and completions occurring during quarters 3 and 4, 2025, and quarter 1, 2026. Currently, two of the three phases of development (drilling and completions) occur during the pronghorn HPH season. Peak water production is currently anticipated to occur in quarter 3, 2025. Crestone has agreed to a Condition of Approval for this location that limits the "initiation of oil and gas production" to the period between May 1<sup>st</sup> and October 31<sup>st</sup> (inclusive).

Crestone has committed to the following minimization BMPs to reduce impacts to big game HPH:

- This location will use gas and oil takeaway pipelines.
- There will be no permanent lighting.
- Permanent production facilities will be powered by utility power.
- Light sources used during development activities will be placed inward and downward, within the sound wall wrap.

#### Additional Operator BMPs

In addition to all measures described above, the Operator will apply the following due diligence BMPs to further promote the protection of wildlife and habitats and avoid unnecessary impacts:

- Project personnel will not intentionally harm, harass, or otherwise disturb wildlife.
- The Operator will provide general wildlife compliance training and resources to relevant project personnel, including contractors.
- Project personnel will report any injured or orphaned wildlife discovered at the project location.
- The Operator will consult with CPW or other appropriate wildlife agency personnel, as needed, should any new significant constraints or concerns arise.
- The Operator will employ qualified biologists and subject matter experts as needed to ensure compliance with wildlife protection measures and expectations.
- The Operator will develop a fencing plan in coordination with wildlife experts.

#### **4. Wetlands, Riparian Habitat, and Other Waters of the U.S.**

Wetlands, riparian areas, FEMA-mapped floodplains, or other potential waters of the U.S. do not occur within the project site. The closest major drainage to the project site is Box Elder Creek, located approximately 0.82 miles to the east.

Potential aquatic and riparian habitat features were identified using aerial imagery, USFWS National Wetland Inventory (NWI), U.S. Geological Surveys (USGS) National Hydrography Dataset (NHD), riparian data (using riparian, herbaceous riparian, cottonwood, and willow categories) from the Colorado Vegetation Classification Project (CVCP) dataset, and HWA potential riparian habitat (mapped by HWA during field surveys). The outer boundary of HWA



potential riparian habitat was mapped using the outer edge of the riparian vegetation (including the canopy edge of riparian trees and shrubs) or the OHWM boundary (if riparian vegetation was not present). Due to unexploded ordinance (UXO) concerns within Lowry, soil pits could not be dug (within potential riparian habitat) to determine what areas would be considered officially delineated wetlands using the U.S. Army Corps of Engineers (USACE) wetland delineation manual protocols.

#### Potential Aquatic and Riparian Habitat – Within 500 Feet

There are no wetlands, potential waters of the U.S., USFWS NWI features, USGS NHD features, CVCP riparian features, or HWA potential riparian habitat features in or within 500 feet of the proposed well pad (Figure 1).

#### Resource Management Recommendations

No aquatic or riparian habitat features were documented within 500 feet of the proposed well pad (Figure 1). Impacts to aquatic and riparian habitat within 500 feet of the proposed well pad are not expected due to the following:

- The proposed well pad is located >500 feet from any riparian habitat.
- The project site is located entirely outside of the FEMA-mapped floodplains. The closest mapped 100-year floodplain is located approximately 0.76 miles to the east.
- The closest major drainage (Box Elder Creek) is located approximately 0.82 miles to the east.
- The stormwater BMPs that the Operator will implement for this project site include: a Grading, Erosion, and Sediment Control (GESCC) Plan and Drainage Study Plan to address stormwater.
- Consultation, including an on-site visit, was conducted with CPW. No aquatic or riparian habitat concerns were identified by CPW.

No wetlands or waters of the U.S. would be directly impacted, therefore a Clean Water Act Section 404 permit should not be required for construction activities at the project site.

### **5. FEMA: 100-Year Floodplain and Flood Hazard Areas**

The project site is outside of the FEMA-mapped 100-year floodplain and the FEMA-mapped flood hazard areas (Figure 2). The closest FEMA-mapped floodplain is located approximately 0.76 miles east of the project site along Box Elder Creek.

#### Resource Management Recommendations

Due to the project site being located outside of FEMA-mapped floodplains, no permitting associated with construction within a floodplain should be required.



## 6. ECMC: High Priority Habitats and Other Protected Resources

One CPW designated HPH is located within the project site: Pronghorn Winter Concentration Area HPH is located within the entire project site (Figure 3).

### Resource Management Recommendations

Consultation, including an on-site visit, was conducted with CPW to assess the HPH. CPW provided direct and indirect impact options to offset impacts to wildlife resources (see Direct and Indirect Impacts in Section 3).

## 7. Migratory Birds

The USFWS IPaC report identified four Birds of Conservation Concern (BCC) with the potential to be present within or near the project site: bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), and northern harrier (*Circus hudsonius*) (USFWS 2024a). In addition to these four BCC species identified by IPaC, burrowing owls (also a BCC species) could occur within or near the project site based on HWA observations.

The following raptor nest data is from raptor nest ground surveys conducted by HWA within the entire LPA, during the nesting season, in 2012-2015, 2017-2019, and 2021-2024 (HWA 2012, 2013, 2014, 2015, 2017, 2018, 2019, 2021, 2022, 2023). Bald eagle nests have not been documented within 0.5 miles of the project site (CPW's recommended buffer zone, CPW 2020). A black-tailed prairie dog colony, located approximately 80 feet west of the proposed access road, provides potential nesting habitat for burrowing owls. Nesting burrowing owls have been previously documented near the project site (Table 1, Figure 4). No golden eagle or ferruginous hawk nests have been documented within or near the project site (or within the entire LPA). Northern harriers are uncommon within the LPA and suitable nesting and foraging habitat does not occur within the project area, therefore they are unlikely to be impacted.

### Resource Management Recommendations

If construction activities start between April 1 and August 31, HWA recommends surveys for migratory bird nests within the disturbance area no more than 14 days before construction activities begin. If construction activities start between February 1 and July 31, CPW recommends surveys for nesting raptors within 0.5 miles of the project site. In addition to general raptor nest surveys, due to the prairie dog colony that is located within 0.25 miles of the project site, CPW recommends burrowing owl surveys between March 15 and October 31 before any construction begins.

## 8. Raptors

Based on CPW raptor nest restriction buffers (CPW 2020) and raptor species present within or near the LPA during the nesting season, eagle nests and ferruginous hawk nests within 1/2 miles of the project site, red-tailed hawk (*Buteo jamaicensis*) nests within 1/3 miles of the project site, and all other raptor nests within  $\leq 1/4$  miles of the project site could have applicable seasonal restriction buffers.



During raptor nest ground surveys conducted within the LPA in 2012-2015, 2017-2019, and 2021-2024, fourteen raptor nests, including eight burrowing owl nests, four red-tailed hawk nests, one great horned owl (*Bubo virginianus*) nests, and one unknown raptor species nest have been previously documented within 0.5 miles of the project site (Table 1; Figure 4; HWA 2012, 2013, 2014, 2015, 2017, 2018, 2019, 2021, 2022, 2023). One of these 14 nests was active in 2024: red-tailed hawk nest #323 (located approximately 0.36 miles east of the pad; outside of CPW's recommended 1/3-mile buffer zone) had three nestlings in the nest on June 11, 2024. Red-tailed hawk nests #12, 86 and 116, great horned owl nest #57, and unknown raptor nest #56 were confirmed gone in 2024. The remaining eight nests were inactive in 2024.

Table 1. Raptor nests within 0.5 miles of the project site.

Nest ID	Species	Status					Distance to Project Site (Miles)	Nest	
		2020 <sup>1</sup>	2021	2022	2023	2024		Substrate	Condition
12	Red-tailed Hawk	NS	Gone	Gone	Gone	Gone	0.49	Cottonwood	Gone
56	Unknown Raptor	NS	Gone	Gone	Gone	Gone	0.29	Cottonwood	Gone
57	Great Horned Owl	NS	Gone	Gone	Gone	Gone	0.13	Cottonwood	Gone
86	Red-tailed Hawk	NS	Gone	Tended	Inactive	Gone	0.15	Cottonwood	Gone
116	Red-tailed Hawk	NS	Gone	Gone	Gone	Gone	0.12	Cottonwood	Gone
<b>266</b>	Burrowing Owl	Inactive	Inactive	Inactive	Inactive	Inactive	0.08	Burrow	Good
<b>302</b>	Burrowing Owl	Inactive	Inactive	Inactive	Inactive	Inactive	0.07	Burrow	Good
<b>303</b>	Burrowing Owl	Inactive	Inactive	Inactive	Inactive	Inactive	0.07	Burrow	Good
<b>307</b>	Burrowing Owl	Productive	Active	Inactive	Inactive	Inactive	0.07	Burrow	Good
<b>308</b>	Burrowing Owl	Productive	Inactive	Inactive	Inactive	Inactive	0.07	Burrow	Good
323	Red-tailed Hawk	--	Active	Productive*	Inactive	Active	0.36	Cottonwood	Excellent
<b>345</b>	Burrowing Owl	--	--	Active	Inactive	Inactive	0.06	Burrow	Good
<b>361</b>	Burrowing Owl	--	--	--	Productive	Inactive	0.06	Burrow	Good
365	Burrowing Owl	--	--	--	Productive	Inactive	0.17	Burrow	Good

<sup>1</sup> - NS = Not surveyed

\* - Active great horned owl nest in 2022

Nest ID (**Bold** text) - CPW raptor nest restriction buffer overlaps project site (excluding gone nests)

### Resource Management Recommendations

Based on CPW raptor nest restriction buffers (CPW 2020), the following restriction buffers could apply to the project site, if these nests become re-occupied (excluding nests that were documented as gone during the field surveys):

- Burrowing owl nests #266, 302, 303, 307, 308, 345, and 361 (within 1/8 mile of the proposed access road): no permitted, authorized, or human encroachment activities within 1/8 mile of the nest sites during the nesting season (March 15 through August 31). This restriction would apply to the proposed access road, the proposed well pad is >1/4 mile from these nests.

If construction activities start between February 1 and July 31, CPW recommends surveys for nesting raptors within 0.5 miles of the project site (CPW 2020). In addition to general raptor nest surveys, due to the prairie dog colony that is located within 0.25 miles of the project site, CPW



recommends burrowing owl surveys between March 15 and October 31 before any construction begins (CPW 2020).

### **9. Threatened, Endangered, and Sensitive Species (USFWS)**

No USFWS designated critical habitats occur within the project site (USFWS 2024a). The USFWS IPaC report lists eight threatened and endangered (T&E) species that have the potential to be affected by construction and drilling operations at the project site (Table 2) (USFWS 2024a). The well pad and access road were used for the IPaC analysis. The eight T&E species have a low likelihood of occurring within the project site either due to habitat not occurring in the area, the species not occurring during the breeding season, or they have not been documented within or near the area (Table 2).



Table 2. USFWS T&amp;E species with the potential to occur within or near the project site.

Species (Status)	Habitat	Occurrence Potential
<b><u>Mammals</u></b>		
Preble's meadow jumping mouse (Threatened) - <i>Zapus hudsonius preblei</i>	Riparian habitat with adjacent, relatively undisturbed, grassland communities and a nearby water source (USFWS 2024b).	<b>Low.</b> Suitable habitat is not located within or near the project site. The USFWS and CPW confirmed that Preble's are not a concern within the entire LPA.
Tricolored bat (Proposed Endangered) - <i>Perimyotis subflavus</i>	Roost in caves, trees, and manmade structures (USFWS 2024b).	<b>Low.</b> Suitable roosting habitat is not located within or near the project site. During bat trapping and acoustic surveys in the LPA, tricolored bats were never detected (HWA 2013, 2014, and 2017).
<b><u>Birds</u></b>		
Piping plover (Threatened) - <i>Charadrius melodus</i>	Lakes and barren river sandbars (USFWS 2024b).	<b>Low.</b> Suitable habitat is not located within or near the project site.
Whooping crane (Endangered) - <i>Grus americana</i>	Does not breed in Colorado. Migrates between winter range (Texas and Arkansas) and summer range (Canada). Requires a variety of wetland habitats (USFWS 2024b).	<b>Low.</b> Could potentially fly over during migration but unlikely to be impacted due to the lack of suitable habitat within the project site.
<b><u>Fishes</u></b>		
Pallid sturgeon (Endangered) - <i>Scaphirhynchus albus</i>	Large rivers and large river tributaries (USFWS 2024b).	<b>Low.</b> Suitable habitat does not exist within or near the project site. Downstream impacts are unlikely if the project does not involve consumptive water use from the Platte River tributaries.
<b><u>Insects</u></b>		
Monarch butterfly (Candidate) - <i>Danaus plexippus</i>	Diverse vegetation with abundant nectar sources and milkweed (their host plant) (USFWS 2024b).	<b>Low.</b> Milkweed was not observed within the project site. HWA conducted butterfly surveys in 2018 and only detected monarchs along the larger drainages where abundant milkweed patches were present (HWA 2018). Monarchs may occasionally forage within or near the project site, however they are unlikely to frequent and breed within or near the project site because their host plant, milkweeds, do not occur within the area.
<b><u>Plants</u></b>		
Ute ladies'-tresses (Threatened) - <i>Spiranthes diluvialis</i>	Moist meadows associated with perennial stream terraces, floodplains, and oxbows (USFWS 2024b).	<b>Low.</b> Suitable habitat does not exist within or near the project site. The closest potential habitat is located along Box Elder Creek to the east.
Western prairie fringed orchid (Threatened) - <i>Platanthera praeclara</i>	Unplowed, calcareous prairies and sedge meadows. Not known to occur in Colorado (USFWS 2024b).	<b>Low.</b> Suitable habitat does not exist within or near the project site. Downstream impacts are unlikely if the project does not involve consumptive water use from the Platte River tributaries.

### Resource Management Recommendations

All eight T&E species identified have a low probability of occurring within or near the project site (see "Occurrence Potential" in Table 2). Therefore, no further action is needed.



## 10. Threatened, Endangered, and Sensitive Species (CPW)

In addition to the species mentioned earlier in this report, three additional species on the CPW threatened, endangered, and species of special concern (sensitive species) list could occur within or near the project site (CPW 2024): black-tailed prairie dog, northern leopard frog (*Lithobates pipiens*), and swift fox. All three species are listed as species of State Special Concern (not a statutory category).

The closest prairie dog colony to the project site is located approximately 80 feet west of the proposed access road (Figure 4). The closest northern leopard frog detection was located approximately 0.87 miles east of the well pad along Box Elder Creek. The closest swift fox detection to the project site was located approximately 740 feet west of the well pad at a camera scent station in 2020 (Figure 4). No swift fox were observed within 1 mile of the project site during the 2023 swift fox surveys (HWA 2023). Although a swift fox was documented in the area in 2020, no swift fox dens have been documented historically in or within 0.5 miles of the project site.

### Resource Management Recommendations

No black-tailed prairie dog colonies occur within the project site, however they are found nearby and could eventually move into the area. Due to black-tailed prairie dogs being a CPW State Special Concern species, they do not receive any state protections. Northern leopard frogs are unlikely to occur within or near the project site based on prior amphibian survey data collected by HWA. There is potential swift fox denning habitat within and near the project site. HWA recommends conducting a swift fox den survey prior to construction activities.

## 11. Summary of Findings

Potentially suitable habitat for the following sensitive wildlife resources were documented within or near the project site: pronghorn (*Antilocapra americana*) winter habitat, nesting raptors, nesting migratory birds, prairie dog colonies, and swift fox denning habitat. Wildlife surveys and seasonal restrictions have been applied (see Resource Management Recommendations and Table 3) to minimize impacts to these sensitive species. Potential adverse impacts to the ecosystem are expected to be minimal if the appropriate surveys are followed, seasonal restrictions are implemented (when possible), invasive species are managed, temporary disturbances are reclaimed (e.g., interim reclamation), and BMPs are followed.

The project site (well pad and access road) will not impact riparian habitat, waters of the U.S., or federally threatened or endangered species. Pronghorn Winter Concentration Area HPH, however, will be affected. The Operator will pay mitigation fees to CPW to offset impacts to wildlife resources.



Table 3. Crestone has committed to the following wildlife surveys if construction begins during the wildlife survey timing window.

<u>Species</u>	<u>Survey Area</u>	<u>Survey Timing Window</u>
Raptor Nests	0.5-Mile Survey Buffer	February 1 – July 31
Burrowing Owl Nests	0.25-Mile Survey Buffer	March 15 – October 31
Migratory Bird Nests	Within the Project Site	April 1 – August 31
Swift Fox Dens	0.25-Mile Survey Buffer	March 15 – June 15
Swift Fox Dens	Within the Project Site	Year-round

## 12. Literature Cited

Colorado Parks and Wildlife (CPW). 2020. Recommended buffer zones and seasonal restrictions for Colorado raptors.

CPW. 2024. Threatened and endangered list. Available at:  
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ECMC. 2021b. Protection of wildlife resources. 1200 Series.

Hayden-Wing Associates, LLC (HWA). 2012. ConocoPhillips Company - Lowry oil & gas lease area. Annual wildlife monitoring report - 2012.

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HWA. 2014. ConocoPhillips Company - Lowry oil & gas lease area. Annual wildlife monitoring report - 2014.

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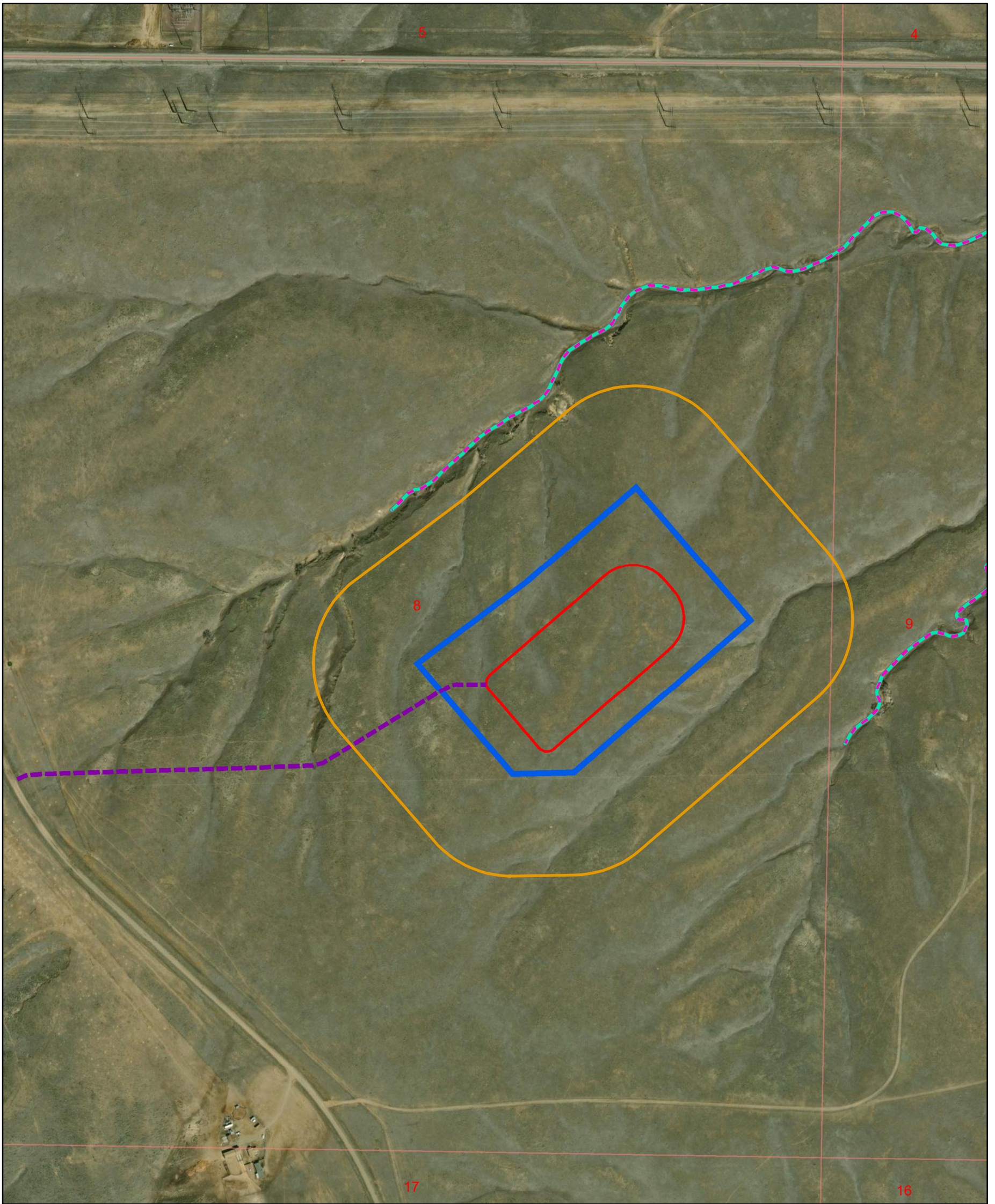
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- HWA. 2021. Crestone Peak Resources, LLC - Lowry oil & gas lease area. Annual wildlife monitoring report - 2021.
- HWA. 2022. Civitas Resources, Inc. - Lowry oil & gas lease area. Annual wildlife monitoring report - 2022.
- HWA. 2023. Civitas Resources, Inc. - Lowry oil & gas lease area. Annual wildlife monitoring report – 2023.
- United States Fish and Wildlife Services (USFWS). 2024a. IPaC information for planning and consultation. Available at: <https://ipac.ecosphere.fws.gov/>
- USFWS. 2024b. ECOS Environmental Conservation Online System. Available at: <https://ecos.fws.gov/ecp/>




**Project Development**

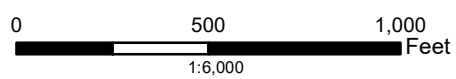
-  Working Pad Surface (WPS)
-  Max Disturbance (Oil and Gas Location)
-  Proposed Access Road
-  500-Foot Max Disturbance Buffer

**USFWS National Wetlands Inventory**

-  Riverine

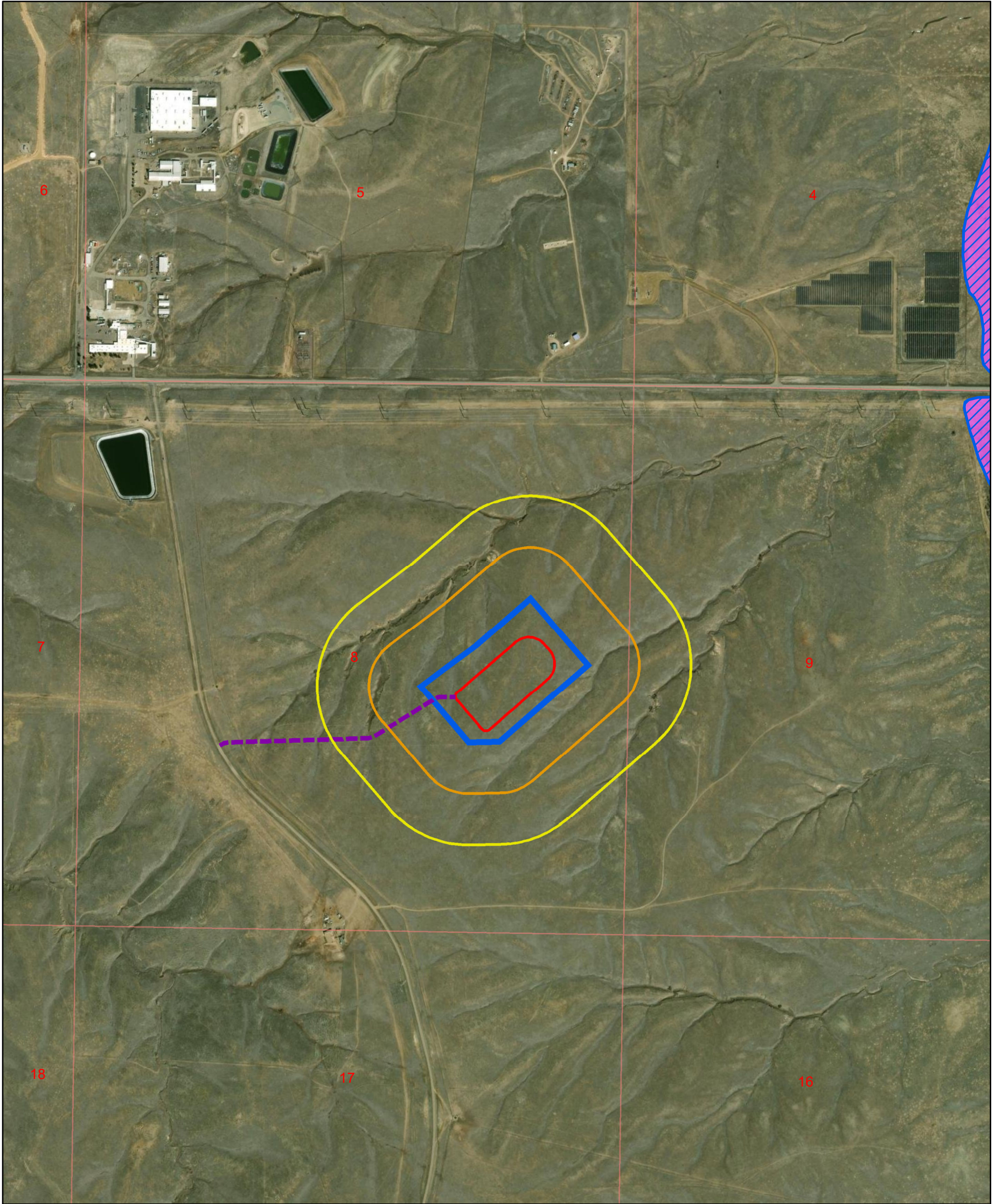
**USGS National Hydrology Dataset**

-  Stream/River



HWA Wildlife Consulting, LLC  
 2308 South 8th St. - Laramie, Wyoming - 82070  
 www.hwa-wildlife.com  
 August 28, 2024

Figure 1. Wetland and riparian data (USFWS NWI, USGS NHD, CVCP Riparian Habitat, and Hydric Habitat [mapped by HWA]) around Crestone's proposed State Harvard/Yale well pad and access road.



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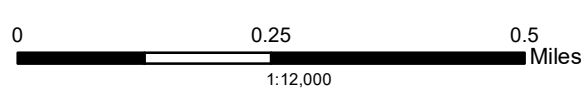
**Project Development**

- Working Pad Surface (WPS)
- Max Disturbance (Oil and Gas Location)
- Proposed Access
- 500-Foot Max Disturbance Buffer
- 1,000-Foot Max Disturbance Buffer

**FEMA Floodplain**

- 100-Year
- Special Flood Hazard

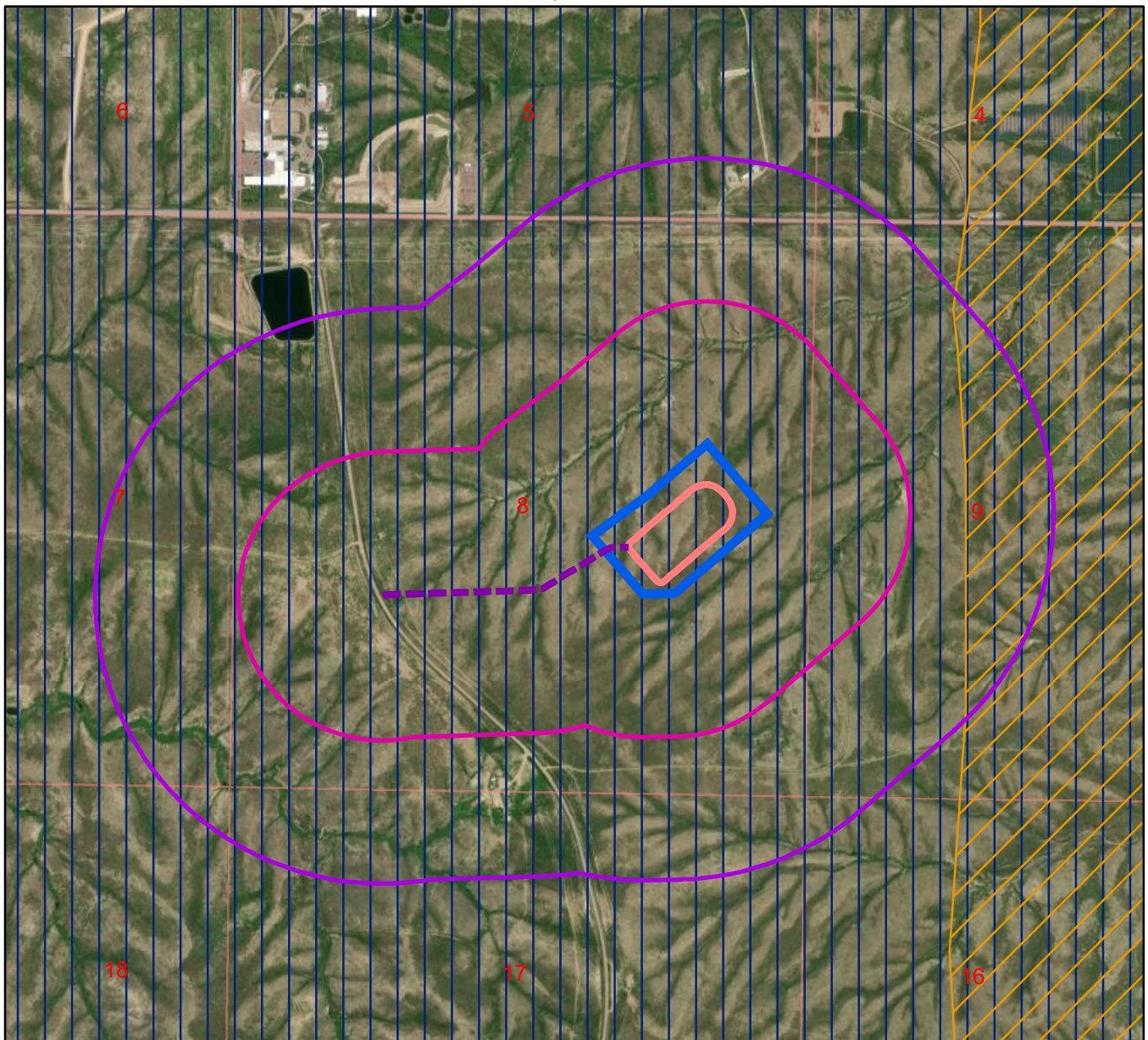
**FEMA Flood Hazard Areas**



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Figure 2. FEMA floodplain data around Crestone's proposed State Harvard/Yale well pad and access road.

R64W





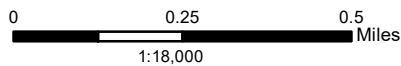
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**Project Development**

-  Working Pad Surface (WPS)
-  Max Disturbance (Oil and Gas Location)
-  Proposed Access Road
-  1/4-Mile Max Disturbance Buffer
-  1/2-Mile Max Disturbance Buffer

**High Priority Habitat (CPW)**

-  Pronghorn Winter Concentration
-  Mule Deer Winter Concentration



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Figure 3. High priority habitat (CPW) around Crestone's proposed State Harvard/Yale well pad and access road during 2024.

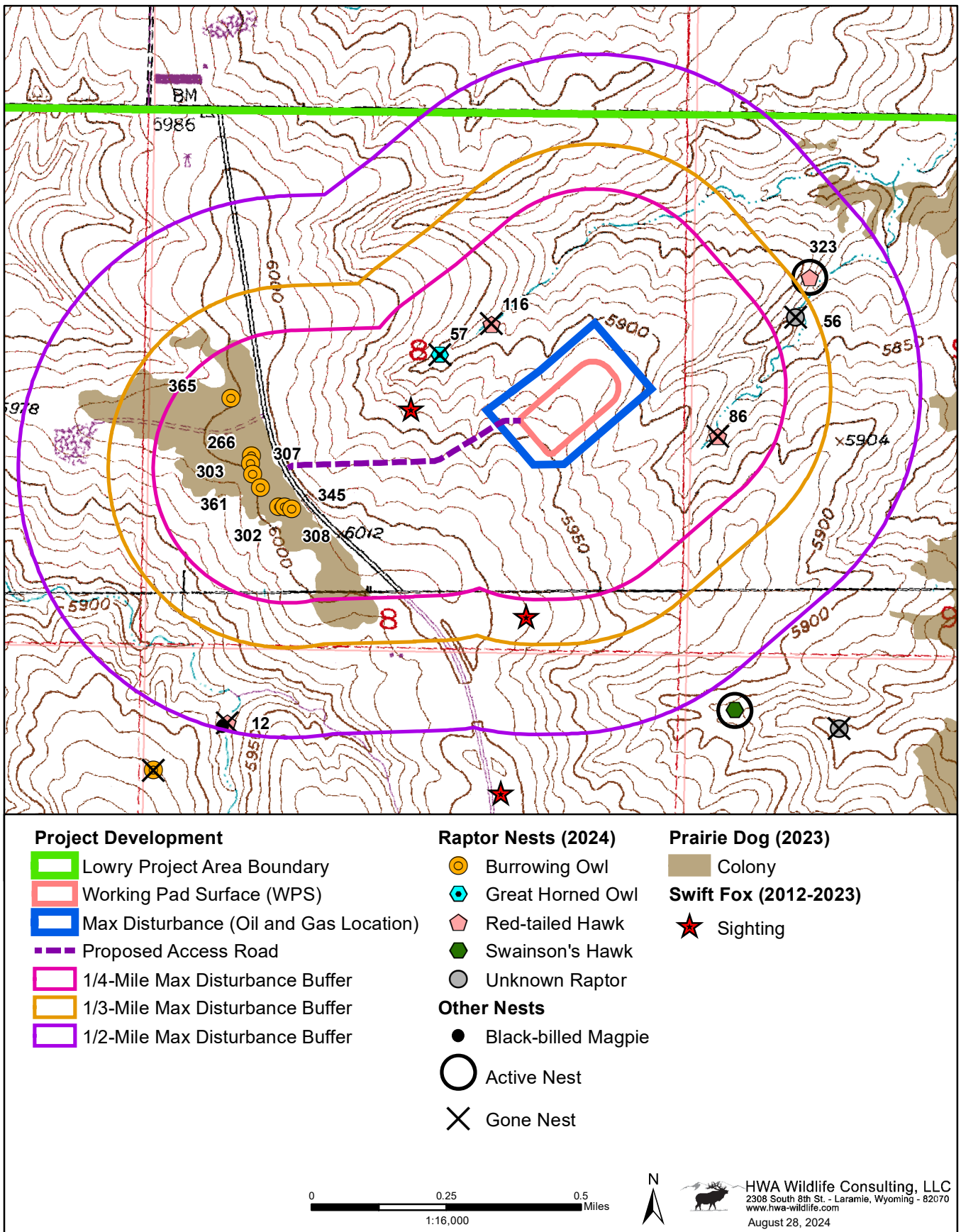


Figure 4. Wildlife habitat around Crestone's proposed State Harvard/Yale well pad and access road during 2024.