



Consultants in Natural Resources and the Environment

---

# Raptor Survey The Reserve at Corral Bluffs El Paso County, Colorado

Prepared for—

Howard Kunstle  
Corral Ranches Development Company  
1830 Coyote Point Dr.  
Colorado Springs, CO 80904-1000

Prepared by—

ERO Resources Corporation  
1842 Clarkson Street  
Denver, Colorado 80218  
(303) 830-1188  
ERO Project #20-048

March 20, 2020

**Contents**

**Project Description .....1**

**Project Location and Site Description .....1**

**Regulatory Background.....1**

Migratory Bird Treaty Act ..... 3

*Penalties for Violating the Migratory Bird Treaty Act* ..... 3

Bald and Golden Eagle Protection Act..... 3

*Penalties for Violating the Eagle Act* ..... 4

Federal and State Recommendations ..... 4

*Golden Eagles*..... 4

*Raptors*..... 5

**Species Profiles and Survey Results .....5**

Golden Eagle ..... 5

*Species Background, Habitat Requirements, and Distribution* ..... 5

*Survey Results* ..... 6

Other Raptors..... 6

*Species Background, Habitat Requirements, and Distribution* ..... 6

*Survey Results* ..... 6

**Recommendations.....8**

**References .....8**

**Figures**

Figure 1. Vicinity Map.....2

**Appendices**

Appendix A: Recommended Buffers

# **Raptor Survey**

## **The Reserve at Corral Bluffs**

### **El Paso County, Colorado**

**March 20, 2020**

## **Project Description**

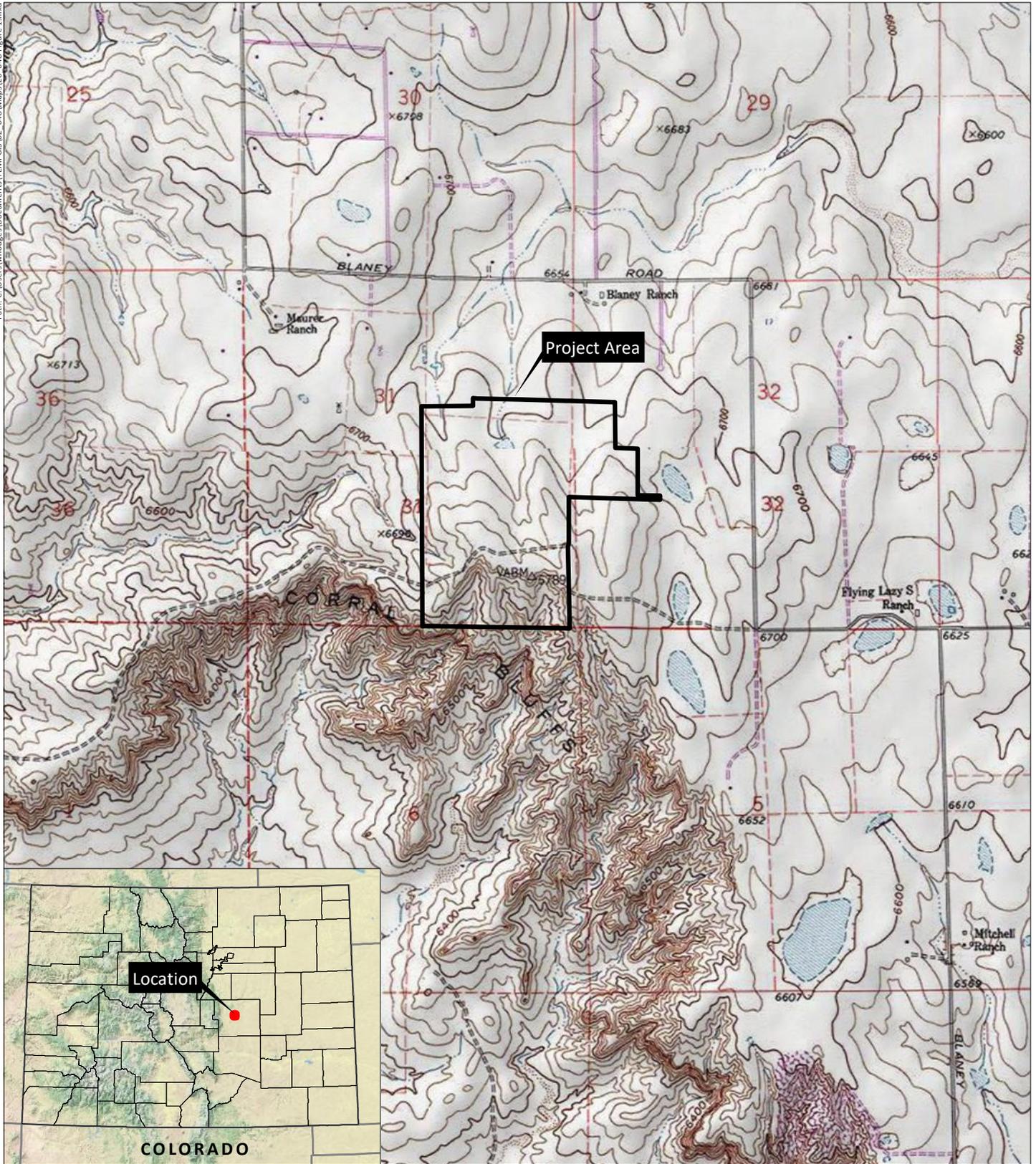
Corral Ranch Development Company (Client) retained ERO Resources Corporation (ERO) to conduct a thorough nesting raptor survey on the proposed Reserve at Corral Bluffs Development and surrounding area (Project Area; Figure 1). The Reserve at Corral Bluffs is a dispersed residential development of single family homes on small acreage lots. Ron Beane and Julia Snieder, biologists with ERO, completed the survey on February 28, 2020. This report provides the methods and results of the raptor survey and recommendations for avoiding and minimizing any potential adverse effects of the Reserve and Corral Bluffs on nesting raptors.

## **Project Location and Site Description**

The project area is in Sections 31 and 32, Township 31 South, Range 64 West of the 6th Principal Meridian in El Paso, Colorado. The UTM coordinates of the approximate center of the project area are NAD 83: Zone 13N; 535189mE, 4302730mN. The latitude/longitude is 38.872717°N, 104.594348°W. The approximate elevation of the project area is 6,720 feet above sea level.

## **Regulatory Background**

Two main federal regulations pertain to migratory birds and raptor nest sites: 1) the Migratory Bird Treaty Act (MBTA) and 2) the Bald and Golden Eagle Protection Act (Eagle Act). Additionally, the State of Colorado has regulations and guidelines pertaining to raptors. This section discusses regulatory backgrounds of the MBTA, the Eagle Act, and state regulations, and how these protections may affect existing and future activities on the Corral Bluffs project site.



### Reserve at Corral Bluffs NRA

Sections 31 and 32, T13S, R64W, 6th PM  
 UTM NAD 83: Zone 13N; 535189mE, 4302730mN  
 Longitude 104.594348°W, Latitude 38.872717°N  
 USGS Corral Bluffs and Falcon, CO Quadrangles  
 El Paso County, Colorado

### Figure 1 Vicinity Map

Prepared for: Corral Ranch  
 Development Company  
 File: 20\_048 Figure 1.mxd (WH)  
 March 20, 2020



## **Migratory Bird Treaty Act**

Migratory birds, as well as their eggs and nests, are protected under the MBTA. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue; hunt; take; capture; kill; attempt to take, capture, or kill; possess; offer for sale; sell; offer to barter; barter; offer to purchase; purchase; deliver for shipment; ship; export; import; cause to be shipped, exported, or imported; deliver for transportation; transport or cause to be transported; carry or cause to be carried; or receive for shipment; transportation; carriage; or export any migratory bird, part, nest, egg, or product; manufactured or not (16 U.S.C. §§ 703-712).

The MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. While destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal and fully prosecutable under the MBTA (Migratory Bird Permit Memorandum, U.S. Fish and Wildlife April 15, 2003). In Colorado, most nongame birds are protected under the MBTA. Bird species not protected under the MBTA include grouse species and nonnative species such as house sparrow, European starling, Eurasian collared dove, and rock pigeon (common pigeon).

## **Penalties for Violating the Migratory Bird Treaty Act**

Individuals or organizations may be fined up to \$5,000 and \$10,000, respectively, and may face up to six months' imprisonment for misdemeanor violations of the MBTA. Felony violations may result in fines of up to \$250,000 for individuals and \$500,000 for organizations, and up to two years of imprisonment.

## **Bald and Golden Eagle Protection Act**

The Eagle Act was originally passed in 1940. In 1962, the Eagle Act was amended to include the golden eagle. Currently, the Eagle Act includes several prohibitions not found in the MBTA, such as molestation or disturbance, and the Eagle Act imposes criminal and civil penalties on anyone (including associations, partnerships, and corporations) in the United States or within its jurisdiction who, unless excepted, takes, possesses, sells, purchases, barter, offers to sell or purchase or barter, transports, exports, or imports at any time or in any manner a bald or golden eagle, alive or dead; or any part, nest, or egg of these eagles. "Take" under the Eagle Act includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or **disturb**. In 2007, "disturb" under the Eagle Act was further defined to mean agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle; 2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior.

Removing nests, destroying nests, or causing nest abandonment may constitute a violation of the MBTA and the Eagle Act. The Eagle Act authorizes the Service to issue eagle incidental take permits (ITPs) only when the take is "compatible with the preservation of bald eagles or golden eagles." In December 2016, the Service published a final rule regarding Eagle Take Permits, outlining revisions to regulations for

eagle incidental take and take of eagle nests (Service 2016; 50 CFR 13 and 22). The permitting process provides limited exceptions to the Eagle Act's prohibitions and the Service has issued regulations concerning the permit procedures in 50 C.F.R. § 22.

### **Penalties for Violating the Eagle Act**

Violations can include a fine up to \$100,000 for individuals and \$200,000 for organizations.

## **Federal and State Recommendations**

### **Golden Eagles**

The U.S. Fish and Wildlife Service (Service) developed National Bald Eagle Management Guidelines in 2007. These guidelines are intended primarily as a tool for landowners and planners to avoid disturbing bald eagles, but also generally apply to golden eagles. The guidelines provide specific recommendations for avoiding disturbance to nest sites. The recommendations include:

1. Keeping a distance between the activity and the nest (distance buffers); the buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites
2. Maintaining forested (or natural) areas between the activity and around nest trees (landscape or topographic buffers)
3. Avoiding certain activities during the breeding season (temporal restrictions)

Although these guidelines establish specific buffer size recommendations, they caution that the distance between an activity and a nest site may need to consider several site-specific variables, including:

- open habitats, particularly in western states, may require larger buffers;
- physical and topographical landscape features that can screen or dampen visual impacts, noise, and artificial light (landscape buffer); and
- the historical tolerance of individual eagles or breeding pairs to human activities at particular localities.

In Colorado, the Service coordinates closely with the Colorado Parks and Wildlife (CPW) to provide guidelines and recommendations to protect individual eagle nest sites.

Similar to the federal guidelines, the CPW has established general Recommended Buffer Zones and Seasonal Restrictions for Eagles and Other Raptors (CDOW 2008). CPW recommendations for golden eagles are provided below:

- **Nest Site.** No surface occupancy (beyond that which historically occurred in the area) within a ¼-mile radius of active nests. Seasonal restriction to human encroachment within a ½-mile radius of active nests from December 15 through July 15.

## Raptors

The MBTA also protects raptors, including active nest sites. There are no federal recommendations pertaining to raptor mitigation avoidance. As described above, CPW (CDOW 2008) has adopted guidelines that recommend restrictions on human disturbance within specified buffer zones surrounding raptor nests (Appendix A). According to these guidelines, raptor species and individual raptors vary in their tolerance limits to disturbance. Some individuals habituate and tolerate human activity at a proximity that would cause the majority of the species to abandon their nests. Other individuals become sensitized to repeated encroachment and react at greater distances. A raptor's response also will vary depending upon the reproductive stage. A breeding raptor pair may be more sensitive during egg laying and incubation, and may be more defensive of the nest site when the chicks hatch (CDOW 2008). Thus, the CPW recommends a "holistic" approach when protecting raptor habitat that protects both nest sites and important foraging areas that support the pairs' nesting effort.

The buffer areas and seasonal restrictions suggested by CPW reflect an informed opinion that if implemented, should assure the majority of individuals within a species will continue to occupy the area. Measurements of nest success and productivity are somewhat imprecise and reflect the need to maintain some flexibility to adjust buffer zones depending upon intervening terrain and vegetation screens that obscure human activity (CDOW 2008). Buffer recommendations vary by species, but typically range between a ¼- and ½-mile radius for species likely to nest on or near the Corral Bluffs project site. There are no recommended buffers established for American kestrel.

## Species Profiles and Survey Results

### Golden Eagle

#### Species Background, Habitat Requirements, and Distribution

The golden eagle inhabits a wide range of latitudes throughout the Northern Hemisphere and uses a variety of habitats ranging from Arctic to desert. Primarily a migrant in the eastern half of the U.S., the golden eagle is most common in the West near open spaces that provide hunting habitat and often near cliffs that supply nesting sites. In the western U.S., golden eagles occur primarily in mountainous canyon land, rim rock terrain of open desert, and grassland areas (Kochert et al. 2002). The golden eagle typically forages in open habitats containing grasslands or shrubby vegetation and feeds mainly on small to medium-sized mammals such as hares (*Lepus* spp.), rabbits (*Sylvilagus* spp.), ground squirrels (*Spermophilus* spp.), prairie dogs (*Cynomys* spp.), and marmots (*Marmota* spp.) (Kochert et al. 2002).

In northeast Colorado, golden eagles nest primarily in grasslands near cliffs and avoid cultivated areas (Olendorff 1973). Resident golden eagles add material to nests year-round and may begin refurbishing nests in autumn, with activity peaking from late January to early March (Watson 1997). Courtship activities have been observed in late winter/early spring in Colorado with nesting as early as April 22 (Kingery 1998). Once an individual establishes a territory, it tends to stay there, defending an area of approximately 20 to 30 square kilometers from conspecifics. A territory may contain up to 14 nests,

which a pair maintains and repairs as part of their courtship (Kochert et al. 2002). Fledged young typically leave the nest between May 8 and July 20 (Kingery 1998).

### **Survey Results**

ERO systematically searched the cliff face of the Corral Bluffs project site with binoculars and a 20-60 power spotting scope from the northern edge of the cliffs. Observations were conducted between 11:00 a.m. and 12 p.m. in good light with little heat distortion. One inactive golden eagle nest was located on the western end of the cliff face (Figure 2). The nest is located on the west face of a cliff band, more than 0.75 mile west of the project area. No adult eagles were seen on or near the nest during the survey. One sub-adult golden eagle was observed circling high above the western portion of Corral Bluffs during the survey. The eagle circled for 15 minutes before flying east out of sight.

A through search of the cliff face, from above and below the rim, found no evidence of an active raptor nest within 0.5 mile of the project area.

### **Other Raptors**

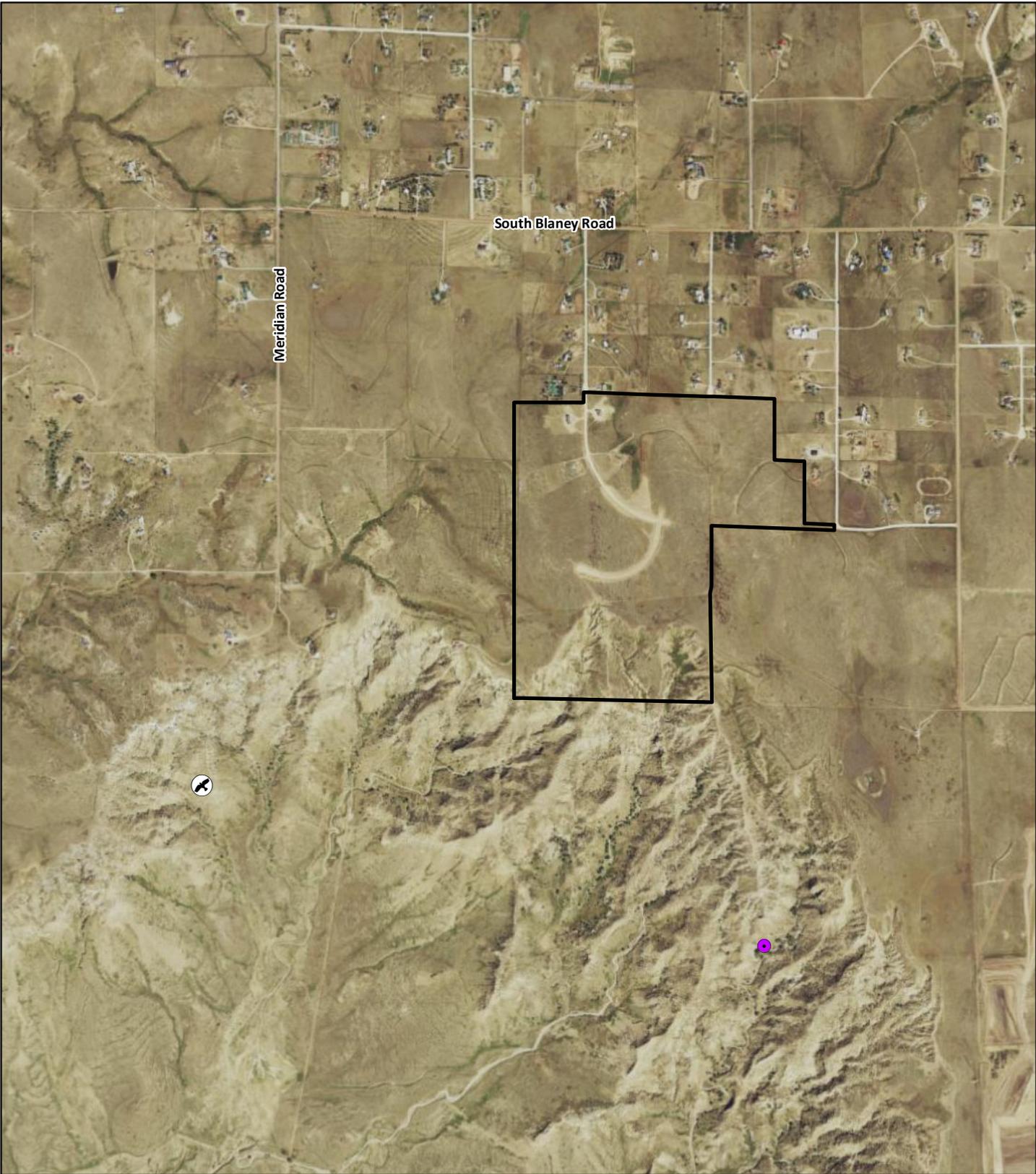
Numerous raptors are known to nest on the Corral Bluffs project site, including red-tailed hawk, Swainson's hawk, prairie falcon, and American kestrel (ERO 2009).

### **Species Background, Habitat Requirements, and Distribution**

Red-tailed hawks typically nest in mature forests of mixed conifer and deciduous trees adjacent to expansive openings, shrubland, grassland, or agricultural sites. Where trees are scarce, red-tails nest on cliffs, transmission line towers, windmills, and other man-made structures projecting above the landscape (Preston and Beane 2009). Swainson's hawks typically nest in a solitary tree, bush, small grove, or line of trees along a stream course, but will nest on human-built structures such as power poles or transmission towers (Bechard et al. 2010). Prairie falcons nest on cliff faces in open country and American kestrels require cavities (tree cavities, rock crevices, cliffs, or nest boxes) for nesting (Kingery 1998). A wildlife assessment prepared for the City of Colorado Springs in 2009 (ERO 2009) identified one inactive prairie falcon nest near the Corral Bluffs project site (within 0.5 mile) and one active prairie falcon nest just more than 0.5 mile from the project site.

### **Survey Results**

Systematic searches of the entire bluffs with a 20-60 power spotting scope from the northern terminus of Corral Valley Road and detailed searches of property immediately adjacent to the Corral Bluffs project site found no active raptor nest within 0.5 mile of the project site. A ledge with whitewash typical of falcons was located at or near the active prairie falcon nest location identified in 2009 (ERO 2009), but no prairie falcons were observed. This potentially active nest site was approximately 0.52 mile from the southeastern corner of the project site.



### Reserve at Corral Bluffs NRA

-  Inactive Golden Eagle Nest
-  Potential Prairie Falcon Eyrie
-  Project Area

Image Source: USDA-FS-AFPO NAIP September 8, 2019

0 750 1,500  
 Feet



### Figure 2 Existing Conditions

Prepared for: Corral Ranch  
 Development Company  
 File: 20\_048 Figure 2.mxd (WH)  
 March 20, 2020



## Recommendations

No active nest sites for golden eagles or other raptors were identified within 0.5 mile (CPW-recommended buffer) of the Corral Bluffs project site and ERO recommends that the project be permitted to proceed without surface occupancy or seasonal buffer restrictions related to nesting raptors. Because of existing residential development, it is unlikely that golden eagles would reoccupy the cliff face near the project area. If golden eagles do relocate to a nest location within 0.5 mile of the project site prior to initiation of construction, ERO recommends coordinating with the CPW and El Paso County to evaluate intervening landscape buffers and adoption of seasonal restrictions if needed. Golden eagles or other raptors that choose to nest within 0.5 mile of the project site during or after construction has begun indicates that the raptor(s) have adapted to the construction activity and/or level of human disturbance and that no restrictive measures are needed. ERO further supports and encourages adoption of the 50- and 100-foot building setbacks from the cliff edge proposed in the proponent's preliminary plan to protect raptors and other wildlife within the bluffs.

## References

- Bechard, Marc J., C. Stuart Houston, Jose H. Sarasola, and A. Sidney England. 2010. Swainson's Hawk (*Buteo swainsoni*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/052>.
- Colorado Division of Wildlife (CDOW). 2008. Recommended buffer zones and seasonal restrictions for Colorado Raptor Nests. Colorado Division of Wildlife. February.
- ERO 2009. Corral Bluffs Open Space Wildlife Assessment. Prepared for Colorado Springs Parks, Recreation and Cultural Services. June.
- Kingery, H.E. (ed.). 1998. Colorado Breeding Bird Atlas. Colorado Bird Atlas Partnership and Colorado Division of Wildlife, Denver.
- Kochert, M.N., K. Steenhof, C.L. McIntyre, and E.H. Craig. 2002. Golden Eagle (*Aquila chrysaetos*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/052>.
- Olendorff, R. R. 1973. The ecology of the nesting birds of prey of northeastern Colorado. Tech. Rep. no. 211. U.S. Int. Biol. Prog., Grassland Biome, Fort Collins, CO.
- Preston, C.R. and R.D. Beane. 2009. Red-tailed Hawk (*Buteo jamaicensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/052>.
- Watson, J. 1997. The Golden Eagle. 1st ed. T and A. D. Poyser, London, U.K.

**Appendix A Recommended Buffers**



## **RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS**

Tolerance limits to disturbance vary among as well as within raptor species. As a general rule, Ferruginous Hawks and Golden Eagles respond to human activities at greater distances than do Ospreys and America Kestrels. Some individuals within a species also habituate and tolerate human activity at a proximity that would cause the majority of the group to abandon their nests. Other individuals become sensitized to repeated encroachment and react at greater distances. The tolerance of a particular pair may change when a mate is replaced with a less tolerant individual and this may cause the pair to react to activities that were previously ignored. Responses will also vary depending upon the reproductive stage. Although the level of stress is the same, the pair may be more secretive during egg laying and incubation and more demonstrative when the chicks hatch.

The term "disturbance" is ambiguous and experts disagree on what actually constitutes a disturbance. Reactions may be as subtle as elevated pulse rate or as obvious as vigorous defense or abandonment. Impacts of disturbance may not be immediately evident. A pair of raptors may respond to human intrusion by defending the nest, but well after the disturbance has passed, the male may remain in the vicinity for protection rather than forage to feed the nestlings. Golden eagles rarely defend their nests, but merely fly a half mile or more away and perch and watch. Chilling and over heating of eggs or chicks and starvation of nestlings can result from human activities that appeared not to have caused an immediate response.

A 'holistic' approach is recommended when protecting raptor habitats. While it is important for land managers to focus on protecting nest sites, equal attention should focus on defining important foraging areas that support the pair's nesting effort. Hunting habitats of many raptor species are extensive and may necessitate interagency cooperation to assure the continued nest occupancy. Unfortunately, basic knowledge of habitat use is lacking and may require documentation through telemetry investigations or intensive observation. Telemetry is expensive and may be disruptive so a more practical approach is to assume that current open space is important and should be protected.

Although there are exceptions, the buffer areas and seasonal restrictions suggested here reflect an informed opinion that if implemented, should assure that the majority of individuals within a species will continue to occupy the area. Additional factors, such as intervening terrain, vegetation screens, and the cumulative impacts of activities should be considered.

These guidelines were originally developed by CDOW raptor biologist Gerald R. Craig (retired) in December 2002. To provide additional clarity in guidance, incorporate new information, and update the conservation status of some species, the guidelines were revised in January 2008. Further revisions of this document may become necessary as additional information becomes available.

## **RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS**

### **BALD EAGLE**

#### **Nest Site:**

No surface occupancy (beyond that which historically occurred in the area; see 'Definitions' below) within ¼ mile radius of active nests (see 'Definitions' below). Seasonal restriction to human encroachment (see 'Definitions' below) within ½ mile radius of active nests from October 15 through July 31. This closure is more extensive than the National Bald Eagle Management Guidelines (USFWS 2007) due to the generally open habitat used by Colorado's nesting bald eagles.

#### **Winter Night Roost:**

No human encroachment from November 15 through March 15 within ¼ mile radius of an active winter night roost (see 'Definitions' below) if there is no direct line of sight between the roost and the encroachment activities. No human encroachment from November 15 through March 15 within ½ mile radius of an active winter night roost if there is a direct line of sight between the roost and the encroachment activities. If periodic visits (such as oil well maintenance work) are required within the buffer zone after development, activity should be restricted to the period between 1000 and 1400 hours from November 15 to March 15.

#### **Hunting Perch:**

Diurnal hunting perches (see 'Definitions' below) associated with important foraging areas should also be protected from human encroachment. Preferred perches may be at varying distances from human encroachment and buffer areas will vary. Consult the Colorado Division of Wildlife for recommendations for specific hunting perches.

### **GOLDEN EAGLE**

#### **Nest Site:**

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from December 15 through July 15.

### **OSPREY**

#### **Nest Site:**

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ¼ mile radius of active nests from April 1 through August 31. Some osprey populations have habituated and are tolerant to human activity in the immediate vicinity of their nests.

### **FERRUGINOUS HAWK**

#### **Nest Site:**

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from February 1 through July 15. This species is especially prone to nest abandonment during incubation if disturbed.

### **RED-TAILED HAWK**

#### **Nest Site:**

No surface occupancy (beyond that which historically occurred in the area) within 1/3 mile radius of active nests. Seasonal restriction to human encroachment within 1/3 mile radius of active nests from February 15 through July 15. Some members of this species have adapted to urbanization and may

tolerate human habitation to within 200 yards of their nest. Development that encroaches on rural sites is likely to cause abandonment.

### **SWAINSON'S HAWK**

#### **Nest Site:**

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ¼ mile radius of active nests from April 1 through July 15. Some members of this species have adapted to urbanization and may tolerate human habitation to within 100 yards of their nest.

### **PEREGRINE FALCON**

#### **Nest Site:**

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile of the nest cliff(s) from March 15 to July 31. Due to propensity to relocate nest sites, sometimes up to ½ mile along cliff faces, it is more appropriate to designate 'Nesting Areas' that encompass the cliff system and a ½ mile buffer around the cliff complex.

### **PRAIRIE FALCON**

#### **Nest Site:**

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from March 15 through July 15.

### **NORTHERN GOSHAWK**

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from March 1 through September 15.

### **BURROWING OWL**

#### **Nest Site:**

No human encroachment within 150 feet of the nest site from March 15 through October 31. Although Burrowing Owls may not be actively nesting during this entire period, they may be present at burrows up to a month before egg laying and several months after young have fledged. Therefore it is recommended that efforts to eradicate prairie dogs or destroy abandoned towns not occur between March 15 and October 31 when owls may be present. Because nesting Burrowing Owls may not be easily visible, it is recommended that targeted surveys be implemented to determine if burrows are occupied. More detailed recommendations are available in a document entitled "Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls" which is available from the Colorado Division of Wildlife

## Recommended Buffer Zones and Seasonal Restrictions Around Raptor Use Sites

Species and Use	Buffer	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
<b>Bald Eagle</b>													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE WINTER NIGHT ROOST without a direct line of sight- No Human Encroachment	¼ Mile	■	■	■								■	■
ACTIVE WINTER NIGHT ROOST with a direct line of sight - No Human Encroachment	½ Mile	■	■	■								■	■
HUNTING PERCH - No Human Encroachment	Contact CDOW												
<b>Golden Eagle</b>													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
<b>Osprey</b>													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
<b>Ferruginous Hawk</b>													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
<b>Red-tailed Hawk</b>													
ACTIVE NEST - No Surface Occupancy	1/3 Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	1/3 Mile	■	■	■	■	■	■	■	■	■	■	■	■
<b>Swainson's Hawk</b>													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
<b>Peregrine Falcon</b>													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
<b>Prairie Falcon</b>													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
<b>Northern Goshawk</b>													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
<b>Burrowing Owl</b>													
ACTIVE NEST - No Human Encroachment	150 feet			■	■	■	■	■	■	■	■	■	■
		= time period for which seasonal restrictions are in place.											

## DEFINITIONS

Active nest – Any nest that is frequented or occupied by a raptor during the breeding season, or which has been active in any of the five previous breeding seasons. Many raptors use alternate nests in various years. Thus, a nest may be active even if it is not occupied in a given year.

Active winter night roost – Areas where Bald Eagles gather and perch overnight, and sometimes during the day in the event of inclement weather. Communal roost sites are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. These roosts may also serve a social purpose for pair bond formation and communication among eagles. Many roost sites are used year after year.

Human encroachment – Any activity that brings humans in the area. Examples include driving, facilities maintenance, boating, trail access (e.g., hiking, biking), etc.

Hunting perch – Any structure on which a raptor perches for the purpose of hunting for prey. Hunting perches provide a view of suitable foraging habitat. Trees are often used as hunting perches, but other structures may also be used (utility poles, buildings, etc.).

Surface occupancy – Any physical object that is intended to remain on the landscape permanently or for a significant amount of time. Examples include houses, oil and gas wells, tanks, wind turbines, roads, tracks, etc.

## CONTACT

For further information contact:

David Klute  
Bird Conservation Coordinator  
Colorado Division of Wildlife  
6060 Broadway  
Denver, CO 80216  
Phone: 303-291-7320  
Email: [david.klute@state.co.us](mailto:david.klute@state.co.us)

## REFERENCES

- Bechard, M.J., and J.K. Schmutz. 1995. Ferruginous Hawk (*Buteo regalis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/172>
- Buehler, D.A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/506>
- Call, M. 1979. Habitat management guides for birds of prey. Technical Note No.338, U.S. Bureau of Land Management, Denver Service Center, Denver, CO. 69pp.

- Energy Research and Development Administration (ERDA). 1977. EIA for CUI Venture application for geothermal loan guarantee (Beryl and Lund, Utah). EIA/GE/77-8. Washington, D.C. 109pp.
- England, A.S., M.J. Bechard, and C.S. Houston. 1997. Swainson's Hawk (*Buteo swainsoni*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/265>
- Greater Yellowstone Bald Eagle Working Group. 1996. Greater Yellowstone bald eagle management plan: 1995 update. Greater Yellowstone Bald Eagle Working Group, Wyoming Game & Fish Dept., Lander WY 82520. 47p
- Grier, J.W., F.J. Gramlich, J. Mattisson, J.E. Mathisen, J.V. Kussman, J.B. Elder, and N.F. Green. 1983. The bald eagle in the northern United States. Bird Cons. 144-66.
- Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. Burrowing Owl (*Athene cunicularia*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/061>
- Holmes, Tamara L. 1993. Behavioral responses of grassland raptors to human disturbance. MS Thesis. Colo. State Univ., Fort Collins. 62pp.
- Holthuijzen, A.M.A., W.G. Eastland, A.R. Ansell, M.N. Kochert, R.D. Williams, and L.S. Young. 1990. Effects of blasting on behavior and productivity of nesting prairie falcons. Wildl. Soc. Bull. 18:270-281.
- Kochert, M. N., K. Steenhof, C. L. McIntyre, and E. H. Craig. 2002. Golden Eagle (*Aquila chrysaetos*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/684>
- Martin, D.J. 1973. Selected aspects of burrowing owl ecology and behavior. Condor 75:446-456.
- Northern States Bald Eagle Recovery Team. 1983. Northern States Bald Eagle Recovery Plan. U.S. Fish and Wildlife Service. 75pp.
- Olendorff, R. R., and W.D. Zeedyk. 1978. Land management for the conservation of endangered birds. Pages 419-428 in S.A. Temple, ed. *Endangered birds*. University of Wisconsin Press, Madison, Wisconsin.
- Poole, A.F., R.O. Bierregaard, and M.S. Martell. 2002. Osprey (*Pandion haliaetus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/683>
- Preston, C.R., and R.D. Beane. 1993. Red-tailed Hawk (*Buteo jamaicensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/052>

- Reynolds, R., R.T. Graham, H.M. Reiser. 1992. Management recommendations for the northern goshawk in the southwestern United States. Gen. Tech. Rep. RM-217. Fort Collins, CO. U.S. Dept of Agri., Forest Service, Rocky Mountain Forest and Range Experiment Station. 90pp.
- Richardson, C.T. and C.K. Miller. 1997. Recommendations for protecting raptors from human disturbance: a review. Wildl. Soc. Bull. 25(3):634-638.
- Rocky Mountain/Southwest Peregrine Falcon Recovery Team. 1984. American peregrine falcon Rocky Mountain/Southwest population recovery plan. U.S. Fish and Wildlife Serv. 105pp.
- Squires, J.R., S.H. Anderson, and R. Oakleaf. 1993. Home range size and habitat-use patterns of nesting prairie falcons near oil developments in northeastern Wyoming. J. Field Ornithol. 64:1-10.
- Steenhof, Karen. 1998. Prairie Falcon (*Falco mexicanus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/346>
- Squires, J.R., and R.T. Reynolds. 1997. Northern Goshawk (*Accipiter gentilis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/298>
- Suter, G.W. and J.L. Jones. 1981. Criteria for Golden Eagle, Ferruginous Hawk, and Prairie Falcon nest site protection. J. Raptor Res. 15(1):12-18.
- Swenson, J.E. 1979. Factors affecting status and reproduction of ospreys in Yellowstone National Park. J. Wildl. Manage. 43:595-601.
- Thomsen, L. 1971. Behavior and ecology of burrowing owls on the Oakland Municipal Airport. Condor 73:177-192.
- U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines. <http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>
- White, C.M., N.J. Clum, T.J. Cade, and W.G. Hunt. 2002. Peregrine Falcon (*Falco peregrinus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/660>

Revised 02/2008