Consultants in

natural

resources and

the environment

Denver • Boise • Durango • Western Slope

FEDERAL CORRECTIONAL INSTITUTION, ENGLEWOOD BLACK-TAILED PRAIRIE DOG HABITAT ASSESSMENT

Prepared for-

Jefferson County Division of Transportation and Engineering 100 Jefferson County Parkway, Suite 3500 Golden, Colorado 80419

On Behalf of-

Federal Bureau of Prisons Federal Correctional Institution, Englewood 9595 W. Quincy Avenue Littleton, Colorado 80123

Prepared by—

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

ERO Project #5235

July 19, 2013

ERQ

ERO Resources Corp. 1842 Clarkson Street Denver, CO 80218 (303) 830-1188 Fax: (303) 830-1199 www.eroresources.com

> ERO Resources Corporation

CONTENTS

oduction1
ck-tailed Prairie Dog Biology and Life History1
sting Habitat
pulation and Density Estimates
ential Impacts
clusions and Discussion
erences
sting Habitat

FIGURES

Figure 1. Site Location

Figure 2. Prairie Dog Management Zones

FEDERAL CORRECTIONAL INSTITUTION, ENGLEWOOD BLACK-TAILED PRAIRIE DOG HABITAT ASSESSMENT

JULY 19, 2013

Introduction

The Federal Bureau of Prisons' Federal Correctional Institution (FCI), Englewood prepared a Prairie Dog Management Plan in 2002 (Tetra Tech EM Inc. 2002, management plan). The management plan consists of management prescriptions for the management and control of blacktailed prairie dogs (*Cynomys ludocicianus*) at the FCI Englewood facility. The management plan divides the facility into two distinct zones – a prairie dog-free zone (about 190 acres) and a prairie dog control zone (about 110 acres). Within the prairie dog control zone, prairie dogs are managed to allow operation and maintenance of utilities and important prison facilities (Tetra Tech EM Inc. 2002). An element of the management plan is to perform a habitat assessment of the facility every five years or before initiating any construction in the prairie dog control zone to determine the efficacy of the management plan and recommend changes if necessary. In response to proposed work within the prairie dog control zone associated with Jefferson County's proposed Quincy widening project, Jefferson County retained ERO Resources Corporation (ERO) to perform a habitat assessment in accordance with the management plan.

Objectives: The objectives of this report are to assess the quality of black-tailed prairie dog habitat in the prairie dog control zone, provide a population estimate and density estimate, determine the carrying capacity of the prairie dog control zone, and provide recommendations on improvements to the management plan.

Black-tailed Prairie Dog Biology and Life History

Prairie dogs are social animals living in towns that range in size from 1 to 1,000 acres. Larger towns are often divided into "wards" by barriers such as ridges, lines of trees, and roads. Residents of a ward may be able to see and hear those of adjacent wards, but movement between wards is generally uncommon. Within a ward, each family or "coterie" of prairie dogs occupies a territory of about one acre. A coterie usually consists of a single adult male, one to four adult females, and any of their offspring less than two years old (Andelt and Hopper 2001).

Prairie dogs live in burrows about 33 feet apart, 3 to 14 feet deep and between 15 to more than 100 feet long. A mound 3 to 10 feet across and 6 to 12 inches high at the entrance of the

burrow prevents water from rushing in and serves as a lookout station. Burrow systems have 1 to 3 entrances (Andelt and Hopper 2001).

Prairie dogs have one litter of 3 to 8 young per year in March or April. The gestation period is 28 to 34 days. The pups venture above ground when they are 5 to 6 weeks old. Dispersal of year-old juveniles and a few adults takes place in late spring. Most prairie dogs travel less than 2 miles, but a few migrate up to 6 miles (Fitzgerald et al. 1994; Andelt and Hopper 2001).

Existing Habitat

FCI Englewood is northeast of the intersection between West Kipling Avenue and South Quincy Street. The facility is located in Sections 2, 3, 10, and 11, Township 5 South, Range 69 West of the 6th Principal Meridian, Jefferson County, Colorado (Figure 1). The elevation of the project area is approximately 5,600 feet above sea level.

The prairie dog control zone has a north area and a south area (Figure 2). The majority of the 110-acre prairie dog control zone consists of disturbed upland grasslands with a mix of native and nonnative species. Weedy species such as smooth brome (*Bromus inermis*) and bindweed (*Convolvulus arvensis*) are predominant in the areas that have been disturbed by prairie dogs. A few native plant species such as western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Stipa viridula*), and blue grama (*Bouteloua gracilis*) may occur in areas with less disturbance. Prairie dogs continuously browse and clip the vegetation while foraging and burrowing, and to improve visibility around their burrows. This ongoing disturbance results in substantial changes to the grasslands community, including the presence of about 25 to 50 percent bare ground. The plant species present are those most able to withstand the constant disturbance.

A building has been constructed and prairie dogs removed from approximately 4.8 acres in the north part of the control zone (Figure 2), reducing the effective size of the control zone from 110 acres to approximately 105 acres. The building occupies about half of this area and the remainder is a disturbed field.

The available prairie dog habitat in the southern and northern areas of the control zone is 57 and 39 acres, respectively, or 96 acres total.

Population and Density Estimates

ERO visited the southern part of the control zone to conduct prairie dog counts on April 29 and April 30, 2013. Conditions on both days ranged from 58-80 °F with winds from 0-10 MPH.

2

Due to the size of the area, three observers were necessary to observe the area at one time. Counts took place every 15 minutes between 10:30 AM and 2:15 PM for roughly 3 hours each day. During each count, observers slowly scanned a pre-determined area with binoculars and counted the individuals. Following each day of survey, the three individual counts at each 15minute increment were totaled. The highest count for the area was 664 individuals.

ERO visited the northern part of the control zone on May 21-23, 2013. Due to the size and topography of the area, only one observer was necessary to oversee the area. Counts took place every 15 minutes between 9:30 AM and 2:15 PM for roughly 3 hours each day. Conditions on all three days ranged from 60-75 °F with winds from 5-10 MPH. The highest count for the area was 165 individuals.

In March, April, and early May population counts in prairie dog towns are at their lowest levels due to winter mortality and because a significant portion of the population may be inactive and below ground during peak periods at this time of year (Tileston and Lechleitner 1966). The maximum count made yields the minimum population estimate for the colony on the project site because it is not likely that all animals are above ground simultaneously. Multiplying the maximum number of individuals counted by 1.75 provides an estimate for the maximum population. This multiplier accounts for the post-winter population dip and the individuals that are below ground that cannot be counted by visual surveys.

Multiplying the maximum count of 829 individuals by 1.75 results in an estimated population of 1,450 prairie dogs in the control area, with approximately 288 in the north area and 1,162 in the south area.

ERO calculated the population density in the prairie dog control zones to determine if the carrying capacity of the control zone is being exceeded. Urban prairie dog colonies are characterized by extremely high densities, approximately 13-75 prairie dogs per acre, compared to 9-14 prairie dogs per acre in unfragmented habitat (Magle et al. 2010). The population density of the southern parcel is 20 prairie dogs per acre and 7 prairie dogs per acre in the northern parcel.

The difference in densities between the two parcels can be attributed to topography and predation. The southern parcel is predominantly flat, with slight rolling topography and few natural barriers. The northern parcel contains a hill with shrubby vegetation over 5 inches that prairie dogs do not prefer (Prairie Dog Coalition, 2002). A coyote den is also present in the northern parcel. Two adult coyotes and several pups were seen during the 2013 site visits. It is

3

very likely that these coyotes prey on the prairie dog populations in this parcel due to the increased cover and proximity to the den.

No corpses were seen during the site visits, indicating a lack of plague within the colonies. Both colonies appear relatively healthy and should not provide a threat to human health.

Potential Impacts

Most areas of anticipated construction activities to be conducted on FCI Englewood as part of the Quincy widening project are occupied by prairie dogs. Up to 3.28 acres of the black-tailed prairie dog colony north of West Quincy Avenue would be permanently lost due to widening the road. Construction of a water quality pond would affect an additional 1.02 acres of prairie dog habitat. Up to 4.74 acres would be temporarily disturbed within the construction easement. The permanent loss would be about 3 percent of the 110-acre prairie dog control zone at the FCI Englewood facility, which would have no effect on the ability of the area to continue to meet the goals of the FCI prairie dog management plan.

Because of the relatively small amount of prairie dog colony that would be impacted, it is unlikely that the proposed construction activities will destroy all of the burrow entrances of a complete burrow system. Prairie dogs within the footprint of the construction activities will be progressively encouraged to move to nearby available burrows and habitat ("passive relocation") prior to heavy construction activity. Indirect impacts from noise and human activity associated with construction will be short in duration, and will not adversely impact the long-term survival of prairie dogs occupying areas within the right-of-way.

Conclusions and Discussion

The goals of the management plan include establishing distinct management zones that eliminate or reduce potential for incurring negative impacts from the prairie dogs (Tetra Tech, 2002). These negative impacts include threats to human health and safety, such as disease transmission and landscape hazards. Prairie dog burrows and tunnels can create dangerous conditions in areas designated for prison personnel training and recreation.

The conditions in the control zone are typical of those present in black-tailed prairie dog colonies in the Denver metropolitan area. Vegetation species composition and cover are suitable for colonies the size of those in the control zone. The population densities in the control zone are within or below the expected ranges for an urban location, which indicates the carrying capacity

is not being exceeded. The slight reduction in the size of the control zone that would result from the proposed Quincy widening project would have a negligible effect on the density of prairie dogs in the south area of the control zone; thus the widening project would not affect the ability of FCI Englewood to meet the management goals of the management plan.

The major deviation from the management plan is that colonies have extended beyond the control zones established in the management plan. Prairie dog burrows are located within the specialized training area, which was identified in the management plan as an area that should be kept clear of prairie dogs for safety reasons. Prairie dogs were also observed west of the southern parcel, between the control zone and the main prison compound. Populations have also expanded west of the northern control zone, along South Kipling Street.

Efforts to contain the prairie dog populations to the control zones have had mixed results. During the 2013 site visits, burrow closings were seen taking place in the prairie dog free zone, just north of the southern parcel. But the fence that roughly follows the boundary of the control zone has possibly slowed, but not confined, the spread of colonies into prairie dog free zones. Prairie dogs were seen both burrowing under and climbing over the fence to access habitat on either side.

ERO has no recommendations for improvements to the management plan, but in order to better achieve the goals set forth in the management plan, ERO recommends that management practices, including lethal control, be carried out regularly to ensure that the specialized training area and the remainder of the Prairie Dog Free Zone remain clear of prairie dogs.

References

- Andelt, W.F. and S.N. Hopper. 2001. Managing prairie dogs. Colorado State University Cooperative Extension Pamphlet No. 6.506. Updated Wednesday, May 02.
- Fitzgerald, J.P, C.A. Meaney, and D.M. Armstrong. 1994. Mammals of Colorado. Denver Museum of Natural History and Univ. Press of Colorado. Niwot, CO. 467 pp.
- Tetra Tech EM Inc. 2002. Management Plan for the Black-Tailed Prairie Dog, *Cynomys ludovicianus* at FCI Englewood, Colorado.
- Tileston, J.V. and R.R. Lechleitner. 1966. Some comparisons of the black-tailed and whitetailed prairie dogs in north-central Colorado. The American Midland Naturalist. 75(2):292-316.

FIGURES



Portions of this document include intellectual property of ESRI and its licensors and are used herein under license. Copyright © 2008 ESRI and its licensors. All rights reserved.





Prairie Dog Control Zone

Area Removed from Prairie Dog Control Zone

0 500 1,000

File: 5235 figure 2 PD.mxd [dlH] July 2013

Management Zones



Portions of this document include intellectual property of ESRI and its licensors and are used herein under license. Copyright © 2008 ESRI and its licensors. All rights reserved.