INTRODUCTION, BACKGROUND and OBJECTIVES

Regulatory Background

On July 30, 1998, the National Wildlife Federation (NWF) filed a petition with the U.S. Fish and Wildlife Service (USFWS) to list the black-tailed prairie dog (Cynomys ludovicianus) as “threatened” under the federal Endangered Species Act (ESA). On February 4, 2000, USFWS published a notice in the Federal Register summarizing its 12-month Administrative Findings on the petition, within which it was cited that the species “warrants listing”, but that higher priority species deserving of more immediate attention “precludes the listing of the black-tailed prairie dog at this time” (a.k.a., a “warranted but precluded” finding). So, for now, the species is officially considered a federal candidate for listing, and USFWS will review its status every 12 months. What this federal action has stimulated, though, is a response by the various states that make up the historic range of the black-tailed prairie dog to voluntarily develop conservation strategies for the species. The USFWS expects that state-implemented conservation programs will both forestall eventual listing and promote recovery of the black-tailed prairie dog.

Study Initiation

EDAW was contracted by the Colorado Department of Natural Resources (DNR) in March 2000 to complete a Black-Tailed Prairie Dog Study of Eastern Colorado, hereafter referred to as “the project”. The focus of the project was to establish a baseline of what is known about this species in Colorado. This included contacting species experts, and locating sources of data pertaining to black-tailed prairie dog town locations in Colorado. The objective was to assemble the various data sets into a single GIS database to serve as the state’s baseline for the species. The database would then be updated as part of this study using field surveys to verify the locations and status of prairie dog towns not visited in recent years. During the updating process, new prairie dog towns observed along the survey routes would also be mapped and included in the baseline. The overall goal of this project was to develop a baseline of known black-tailed prairie dog occurrences in Colorado that would be useful in setting the state’s conservation strategy for the species.

History of Black-tailed Prairie Dogs in Colorado

Because the overall purpose of this study is to establish the range and amount of occupied black-tailed prairie dog habitat in Colorado, it would perhaps be useful to first summarize what is known about their historic range in the state. Also, the reader should be aware that the terms prairie dog “town” and “colony” are essentially interchangeable, and this report takes full advantage of both uses.
Historically, black-tailed prairie dogs were abundant throughout the eastern 1/3 of Colorado. While no early estimates of acreage exist, several naturalists and researchers offered observations of their extent in the state. Cary (1911) stated: “There is probably not a county east of the foothills in which it is not present in considerable numbers, and colonies are found in some of the broader foothill valleys to an elevation of 6,000 feet.” Hollister (1916) indicated: “… this species is very abundant on the plains of Colorado and often occurred in towns covering several square miles.” Lechleitner (1962) had the following to offer: “There are prairie dogs in all but nine (Denver, Hinsdale, San Juan, Pitkin, Eagle, Summit, Grand, Clear Creek and Gilpin) of the 63 counties in Colorado. In the more than 50 years since Merritt Cary made his biological survey of the state – 50 years of the horse, cow, sheep, plow, irrigation ditch, strychnine, thallium, 1080, cyanide and carbon bisulfide – prairie dogs have been greatly reduced in number and all of the larger towns are gone, but still they persist, and the outlines of their geographic ranges are not greatly altered.”

The earliest published estimate of prairie dog occupied acreage in the state is from C.P. Gillette in 1919, the State Entomologist at the time. For all three species of prairie dog in the state (Gunnison’s, white-tailed, and black-tailed), Gillette stated: “Prairie dogs inhabit about 12 million acres in the State, and are distributed over more or less territory in 55 counties.” Based on species ranges, one could assume that about 60%, or 7 million acres, of this acreage represents black-tailed prairie dogs.

Regarding early estimates of prairie dog town size, Lechleitner (1969) found few colonies exceeded 49 acres in size, and Bissell et al. (1979) calculated a mean colony size of 43 acres.

Dr. James Fitzgerald provided the following excerpt from a 1919 C.P. Gillette report. It is actually from a letter to Mr. Gillette, written by Fred Warren of Warren Livestock Co. out of Cheyenne, Wyoming, dated September 4, 1919. It is offered here as a indication of how prairie dogs were viewed in the early part of 1900’s, some of which persists today.

… “We were, therefore, very much astonished at the result we obtained by using the poison grain that you furnished us. The fact of the matter is we had such remarkable success that we kept one and sometimes two crews of poisoners busy during the spring, fall and winter, and have attempted to poison nearly every acre of land which we own or rent in Colorado, except where the land consisted of isolated areas situated outside pest districts, and where our neighbors were not poisoning. Practically all of the poisoning has been done at the contract rate of 15 cents per acre; the poisoners furnish their own poison, board themselves, and furnish their own transportation. Altogether in Colorado and adjacent lands in Wyoming, we have poisoned or contracted for over 60,000 acres and feel that we have made an exceedingly good investment. The results obtained
have been astonishing. Parts of our land were very heavily infested with these dogs, whereas now a prairie-dog is a very unusual sight, although, of course, we do find an occasional dog that has not been poisoned …”

Some recent accounts of acreage occupied by black-tailed prairie dogs in the state are based on partial field surveys, and on mail surveys to landowners. A 1978 and 1979 survey of 12 counties in eastern Colorado mapped 24,600 acres of black-tailed prairie dog towns (Bissell et al. 1979). Van Pelt (1999) extrapolated from this to estimate the size of the species’ entire range in Colorado, and arrived an 89,000-acre figure of occupied black-tailed prairie dog habitat in the state. Using a landowner survey approach, the Colorado Department of Agriculture reported 1,553,000 acres of occupied prairie dog (all species) habitat in Colorado. Adjusting it so that it was reflective of only black-tailed prairie dogs, the Department of Agriculture estimated 930,000 acres of occupied habitat for the species. The recent NWF petition to list the species cites a 44,000-acre figure provided by Knowles (1998) for Colorado.

Consultations with Species Experts and Literature Review

EDAW began work on this task during our proposal preparation effort, and the consultations continued during the project’s data acquisition phase of work. While it was not possible to contact every species expert, nearly all of those that were consulted with agree on a key point - that the black-tailed prairie dog faces numerous threats throughout most of its range. The effects of sylvatic plague, recreational shooting, and control efforts, when combined with an increasing trend towards land conversion and habitat fragmentation, are resulting in dramatic reductions of prairie dog towns and colonies, including local extirpation of the species from some areas.

Colorado researchers and land managers who were contacted nearly all reported overall declines in black-tailed prairie dog numbers on their property or within their study area, with most acknowledging that population levels are fluctuating widely from year-to-year due to plague outbreaks. Most species experts in Colorado also freely admit to not knowing how the species is doing in the more remote, rural areas of eastern Colorado. The species status in the Front Range counties is, however, better understood. This is where the bulk of the data being incorporated into this study will come from. The Front Range is also where habitat fragmentation from urban growth and agricultural conversion is on the rise, making it harder for black-tailed prairie dog towns to recover from plague epizootics. As native prairie habitat becomes more and more fragmented, it is becoming increasingly difficult for the species to reach and repopulate plague-decimated areas of suitable habitat.

On the extent of occupied black-tailed prairie dog habitat in Colorado, most researchers were not willing to speculate. In fact, most are hoping that this study, commissioned by Colorado DNR, will shed some light on that issue. Of
the few researchers that were willing to comment on the species occupied range in the state, several believed that the number was somewhere between that offered by Knowles (1998), which was 44,000 occupied acres, and that suggested by the U.S. Fish and Wildlife Service (12-month Administrative Finding document), which is 93,000 occupied acres.

**Project Objectives**

The objectives of this study are as follows:

1. Locate and assemble existing data sets of black-tailed prairie dog occurrences within Colorado.
2. Field-verify at least 25% of the “known” (previously documented) prairie dog town/complex locations.
3. Develop a GIS database that includes all new, verified, and older/unverified prairie dog town/complex locations.
4. Determine a number that best reflects the current total acreage of known, occupied black-tailed prairie dog habitat in eastern Colorado.
5. Provide other relevant/important statistics from the project’s database.
6. Develop a map of potential black-tailed prairie dog habitat in Colorado.
7. Consult with species experts to develop a baseline understanding of black-tailed prairie dog threats in Colorado.
8. Provide recommendations that DNR and the Colorado Division of Wildlife (CDOW) can consider in developing the state’s conservation strategy for the species.

**Project Challenges**

The challenges the EDAW team faced in completing this project are almost too numerous too mention. But, the reader should be aware of the top two that relate to accuracy. First, it was very difficult to assemble prairie dog data sets from a variety of sources in a way that promoted consistency and accuracy, and emphasized the most recent information. Sometimes data were contradictory, in other cases they just overlapped. In instances where prairie dog town data from different sources overlapped in time and space, then the most current and reliable sources were used to describe the town boundary and status. When outside advice was needed, EDAW consulted with CDOW personnel. The end result, though, was a compiled database that achieved the highest level of accuracy possible concerning “known” black-tailed prairie dog town locations and status in Colorado, with “known” including both previous and new records.

Second, regardless of the accuracy of the final database, some caution should be exercised in interpreting the results of this study. As most people who are familiar with this study’s scope already know, it does not constitute, nor was it ever intended to constitute, a complete inventory of black-tailed prairie dog occurrences for the entire state. The objective here was simply to compile data...
already collected by a variety of independent survey efforts, to update a portion of that data via field verification this year (2000), and to supplement it with records of new prairie dog town occurrences. Due to budget and time constraints, it was not possible for this study to attempt a thorough survey of all remote and inaccessible areas, and no concerted attempt was made to gain access onto private lands (accept to view them from public roadside edges).

Finally, the reader is reminded that, given the threats facing this species in Colorado and throughout its range, which are summarized in the next section of this report, prairie dog towns documented as currently active may not be present in the near future. This ephemeral nature is unfortunately due to the combined effects of sylvatic plague, recreational shooting, control programs, and land conversion.