

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Great Plains Wildlife Damage Control Workshop  
Proceedings

Wildlife Damage Management, Internet Center for

---

December 1993

## A Prairie Dog Abatement Program in San Juan County, Utah

Terry A. Messmer  
*Utah State University*

Jim Keyes  
*Utah State University Extension Service*

Roy McDonald  
*USDA/APHIS/ADC - Salt Lake City, Utah*

Follow this and additional works at: <http://digitalcommons.unl.edu/gpwdcwp>



Part of the [Environmental Health and Protection Commons](#)

---

Messmer, Terry A.; Keyes, Jim ; and McDonald, Roy , "A Prairie Dog Abatement Program in San Juan County, Utah" (1993). *Great Plains Wildlife Damage Control Workshop Proceedings*. 347.  
<http://digitalcommons.unl.edu/gpwdcwp/347>

This Article is brought to you for free and open access by the Wildlife Damage Management, Internet Center for at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Great Plains Wildlife Damage Control Workshop Proceedings by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

## A Prairie Dog Abatement Program in San Juan County, Utah

Terry A. Messmer  
Utah State University

Jim Keyes  
Utah State University Extension Service  
Roy McDonald \_  
USDA/APHIS/ADC - Salt Lake City, Utah

### Introduction

Four species of prairie dogs are native to the plains and plateaus of the western United States. The most abundant and widely distributed of these is the blacktailed prairie dog, (*Cynomys ludovicianus*). This species has been a frequent topic of discussion at previous Great Plains Wildlife Damage Control workshops.

Black-tailed prairie dog ecology and management was the topic of a panel discussion held at the Fifth Great Plains Wildlife Damage Control Workshop, in Lincoln, Nebraska (Timm and Johnson 1982) and the theme topic at the Eighth Great Plains Wildlife Damage Control Workshop in Rapid City, South Dakota (Uresk et al. 1988).

The remaining three prairie dog species, all in the white-tail group, occur in Utah. These are the white-tailed prairie dog (*Cynomys leucurus*) in eastern and northeastern Utah, the Zuni Or Gunnison's prairie dog (*C. gunnisonii*) in southeastern Utah, and the Utah prairie dog (*C. parvidens*) in southcentral Utah. Of these, the Utah prairie dog is federally recognized as a threatened species.

Although the ecology of the white-tail prairie dog group has been studied, much of the information reported deals with behavioral aspects. Very few studies deal directly with population ecology (Longhurst 1944, Tileston and Lechleitner 1966, Clark 1977, Elmore et al. 1976, Menkens et al. 1988). Although aspects of white-tail group and black-tailed ecology may be similar, their life histories differ (Longhurst 1944, Tileston and Lechleitner 1966, Campbell and Clark 1981, Hoogland et al. 1988, Menkens et al. 1988). Knowledge of these differences are important in designing and implementing programs to manage the damage caused by species of the white-tail prairie dog group.

The purpose of this paper therefore is twofold. First, I will review and compare the ecology of the white-tail prairie dog groups as they occur in Utah and the West to that of the black-tailed prairie dog. Secondly, I will discuss management of the damage caused by the white-tail prairie dog group in Utah through the implementation of coordinated county-wide abatement programs. This latter discussion will describe program efforts conducted in southeastern Utah's San Juan County to manage damage associated with the Gunnison's prairie dog.

## Prairie Dog Biology

As members of the white-tail prairie dog group, the white-tailed, Gunnison's, and Utah prairie dogs all possess the diagnostic white-tipped tails. Proportionately they are smaller than black-tailed prairie dogs, weighing between .7 and 1.1 kgs. (1 1/2 and 2 1/2 lbs). They typically occur in more arid regions at higher elevations.

White-tailed and Utah prairie dogs have been reported inhabiting sparsely populated towns at elevations up to 3080 m (10,000 ft). Gunnison's, the smallest of the whitetailed species, may occur on open grassy, to brushy areas up to 3696 m (12,000 ft).

Prairie dogs of the white-tail group in general have been reported to be somewhat less social than black-tailed prairie dogs. Although there are records of white-tailed prairie dog towns occupying several hundred hectares, most towns consist of only a few hectares.

Longhurst (1944) reported that Gunnison's prairie dog colonies or towns consisted merely of aggregations of burrows on favorable sites, as opposed to true gregarious colonies. However, even though these species do not live in as closely knit towns as the black-tailed species of the Great Plains, individuals remain greatly dependent upon each other for early warning of approaching danger. The most obvious indicator of prairie dogs in an area are the mounds of earth around the burrow entrances. Mounds are formed as a result of the excavations of new burrow systems and the modification of old ones (Clark 1977). The mounds constructed by blacktailed prairie dogs tend to be quite large, and constructed of excavated soil mixed

with topsoil from around the burrow entrance (Merriam 1901).

Unlike the black-tailed prairie dog, the mounds around the burrow openings of white-tailed prairie dogs are not as pronounced. King (1955) described whitetailed prairie dog mounds as being mere piles of soil. Clark (1977) typified whitetail prairie dogs mounds in Wyoming as large, unconsolidated, semi-rounded horizontal structures composed only of excavated subsoil.

Gunnison's prairie dog mounds are also built only of subsoil, but they are seldom large, and no attempt at packing them has been reported (Longhurst 1944). There does, however, appear to be a correlation between the size of the mounds and the steepness of the slope; the steeper the slopes exhibiting better runoff, the smaller the mounds.

Black-tailed prairie dog towns may exhibit burrow densities in excess of 40 openings per ha (Koford 1958). White-tailed and Gunnison's prairie dog towns frequently contain less than 8-10 burrow openings per ha (Tileston and Lechleither 1966, Clark 1977). Extreme concentrations of 14 openings per ha have been reported from Gunnison's prairie dogs in Colorado (Longhurst 1944).

Unlike black-tailed prairie dogs, members of the white-tail prairie dog group hibernate during the winter. Hibernation for most of the group begins in late summer to early fall. They reappear the following year in February and March. The colonies as a whole are active from 7 to 8 months throughout the year (Longhurst 1944, Tileston and Lechleitner 1966,

Elmore et al. 1976, Clark 1977).

Another striking difference between the two groups is related to infra-town habitat diversity. Black-tailed prairie dogs, in addition to only inhabiting relatively flat sites (less than 5% slopes), tend to greatly modify the vegetation (thus the structural diversity) on their towns by clipping and actively maintaining in a short stature (Hoogland 1979, Coppock et al. 1983).

White-tailed and Gunnison prairie dogs do not exhibit the same preference for open ground. Burrows have been reported scattered among shrubs or even trees. Moreover, these species do not attempt to modify their habitats by clearing away the vegetation located in the vicinity of their burrows to achieve an unobstructed view as has often been reported in black-tailed prairie dogs (Longhurst 1944, Clark 1977, Menkens et al. 1988).

As such, the lack of visible habitat modification evidenced in white-tailed and Gunnison's prairie dogs, coupled with their dispersed, uneven distribution throughout the habitat make town boundary identification, let alone delineation from aerial photographs, nearly impossible. Thus, unlike black-tails, it is not possible to use aerial photography to assist in concentrating management effort to control white-tails

If white-tailed and Gunnison prairie dog management is to include the use of lethal controls (poisoning) it is essential that the town boundaries be clearly delineated. Failure to do such may result in an incomplete treatment, and thus facilitate a rapid recovery. In the case of white-tailed prairie dogs, boundary delineation is best

accomplished through ground checking and mapping of existing burrows.

### San Juan County Profile

San Juan County is the largest county in Utah with 2.3 million ha (5.7 million ac). Over 64 percent of this acreage is federally owned ~ (1,472,000 ha or 3,726,381 ac). Indian lands comprise an additional 21 percent of the acreage, with private, urban, state and other lands the remaining 15 percent. Less than one percent of the land in the county is privately owned. Of this acreage, only 136,000 ha (340,000 ac) is devoted to production agriculture.

There are approximately 70,000 ha (75,000 ac) of non-irrigated cropland in San Juan County. This land being used to produce wheat, dry-land alfalfa, pinto beans, and grass seed. In 1991, 4,800 ha (12,000 ac) were irrigated to produce alfalfa. Even given this acreage, agricultural products (livestock, wheat, and alfalfa) generate an annual estimated income of over \$10 million dollars

Elevations in San Juan County range from 1,220 to 3,962 m (4,000 to 13,000 ft). The climate is characterized as arid to semi-arid with an annual average precipitation ranging from 15.24 cm (6 in) to more than 63.5 cm (25 inches).

### Need for Coordinated Prairie DoE Abatement Program

A survey of 35 producers in San Juan County indicated that a total of 1500 ha (3,750 ac) were impacted by Gunnison prairie dogs. Approximately 70 percent of this acreage (some 25 percent of all the irrigated land in the county) was irrigated

alfalfa lands. Producers also indicated that although they may have achieved moderate control in the past, the areas previously controlled were continually being reinfested by prairie dogs from adjacent areas where control measure had not been implemented. Although some of these prairie dogs were coming off public lands, many of the invaders originated infested lands held in private ownerships.

At the request the San Juan County Extension Agent, the Utah State University Wildlife Extension Program in conjunction with the state office of the USDA APHIS/ADC program, the USU Pesticide Program coordinator, the U.S Fish and Wildlife Service, the Utah Department of Agriculture, and the Utah Division of Wildlife Resources organized, coordinated, and conducted a county-wide prairie dog abatement program.

The program, conducted on September 16, 1992, drew over 50 participants. Participants received refresher training concerning the use of restricted-use rodenticides. In addition to this training the participants were briefed on Gunnison's prairie dog biology, the proper methods of pre-baiting, and the use baits and fumigants (2 percent zinc phosphide baits and aluminum phosphide tablets) to reduce prairie dog populations while also minimizing the risks to non-targets.

As part of this coordinated effort, a USDA APHIS\ADC wildlife biologist discussed risks related to the use of rodenticides, in this case a fumigant, on black-footed ferrets (the last confirmed sighting of a black-footed ferret in Utah occurred in southern San Juan County during the 1950's). The participants were informed

that since the abatement work was to be done on private land, black-footed ferret surveys were not required prior to baiting or use of the registered fumigant. The landowners present were, however, encouraged to participate in a voluntary survey if deemed appropriate. To facilitate this process, topographic maps of the county were made available to allow landowners to plot the location and delineate the boundaries of the prairie dog towns they intended to treat.

Every landowner attending the workshop participated in this process. Of the intended treatment sites identified, only five fell within the ferret survey guidelines established by the U.S. Fish and Wildlife Service. Arrangements were made with these landowners to conduct the surveys prior to initiating prairie dog abatement measures.

Unfortunately, shortly after these arrangements were made, and thanks in part to a somewhat unorthodox means of publicizing the program by the county extension office, a representative of the Southern Utah Wilderness Association (SUWA) contacted the Utah ADC Office in Salt Lake and demanded that ADC seek Section 7 Endangered Species Act consultation prior to proceeding with the program. In addition, SUWA demanded that ADC prepare an Environmental Assessment covering the action. In their letter to the ADC state director, SUWA expressed concerns about the abatement program's potential impact on black-footed ferret populations. In the same letter, the organization threatened litigation if ADC failed to respond to the stated demands.

During this abatement program, ADC had been participating strictly in an advisory capacity. Their role was largely limited to providing the personnel and expertise to conduct black-footed ferret surveys on those private lands which fell within established criteria. Unfortunately, because SUWA's demands and litigation threats, ADC chose not to conduct the surveys.

It is ironic that in this particular situation, an organization such as SUWA that states it is dedicated to protecting wildlife would be engaged in a ploy that actually may have further jeopardized an already endangered species. It appears to those of us that were party to this situation, the organization may have in fact been more intent on playing politics than protecting wildlife

#### The Upshot

The prairie dog abatement operation, employing both 2 percent zinc phosphide bait and fumigant, proceeded according to schedule without completion of federally sanctioned ferret surveys. The weather conditions for the next three weeks following the program remained clear and calm. During this time, over 1000 pounds of 2 percent zinc phosphide baits labeled for the control of Gunnison's prairie dogs were distributed and dispensed.

A follow-up survey of the landowners concerning the effectiveness of the control efforts generated a mixed response. Estimates of the effectiveness ranged from complete control to only 30 percent. Based on responses, the average effectiveness of the control program was estimated to be between 70-80 percent.

This past spring, landowners within the treatment sites have been conducting follow-up control efforts. Given the unusually high precipitation levels in the county during this time of the year, much of this work was accomplished through the use of fumigants.

#### Conclusion

Based on the response to this initial program, similar programs have been conducted in three additional counties. These programs combined have attracted over 100 participants. Each program conducted incorporates information on integrated pest management approaches to controlling prairie dog damage. Lethal as well as non-lethal management approaches were presented, discussed and demonstrated. In addition, each program focuses on the role and responsibility of the private landowners in minimizing the risk to non-target species if they employ lethal options.

#### literature Cued

**Clark, T.W.** 1977. Ecology and ethology of the white-tailed prairie dog (*Cynomys leucurus*). Milwaukee Public Museum. Publications in Biology and Geology, Number 3. 97 pp.

Hoogland, J.L. 1979. The effect of colony size on individual alertness of prairie dogs (*Sciuridae: Cynomys spp.*). *Anim. Behav.* 27:394-407.

—D.K. Angell, J.G. Daley, and M.C. Radcliffe. 1988. Demography and population dynamics of prairie dogs. In: Uresk, D.W., G.L. Schenbeck, R. Cefkin.. technical coordinators. 1988.

Eighth Great Plains Wildlife Damage Control Workshop Proceedings. General Technical Report RM-154. Fort Collins, Co. USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station; 231 pp.

Campbell, T.M. ITI, and T. W. Clark. 1981. Colony characteristics and vertebrate associates of white-tailed and black-tailed prairie dogs in Wyoming. *Am. Mid. Nat.* 105:269-276.

Coppock, D.L., J.K. Detling, J.E. Ellis, and MI Dyer. 1983. Plant-herbivore interactions in a North American mixedgrass prairie. In: effects of black-tailed prairie dogs on infra-seasonal aboveground plant biomass and nutrient dynamics and plant species diversity. *Oecologia* 56:1-9.

Elmore, S., G.W. Workman, C. Budge, and G.E. Neusaenger. 1976. A Baseline study of the past and present status of the Utah Prairie Dog (*Cynomys parvidens*) in Bryce Canyon National Park. Department of Wildlife Science, Utah State University, Logan, Utah. 40 pp.

King, J.A. 1955. Social behavior, social organization, and population dynamics in a black-tailed prairie dog town in the Black Hills of South Dakota, *Univ. Mich. Contrib. Lab. Vert. Biol.*, 67:123.

Koford, C.B. 1958. Prairie dogs, whitefaces, and blue grama. *Wild. Monogr.*, No. 3.

Longhurst, W. 1944. Observations on the ecology of the Gunnison's prairie dog in Colorado. *J. Mammal.*, 25:24-36.

Menkens G.E. Jr., BI Miller, and S.H. Anderson. 1988. White-tailed prairie dog ecology in Wyoming. In: Uresk, D.W., G.L. Schenbeck, R. Cefkin., technical coordinators, 1988. Eighth Great Plains Wildlife Damage Control Workshop Proceedings. General Technical Report RM-154. Fort Collins, Co. USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station; 231 pp.

Merriam, C.H. 1901. The prairie dogs of the Great Plains. In *USDA Yearbook*, 1901:257-270.

Tileston, J.V. and R.R. Lechleitner. 1966. Some comparisons of the black-tailed and white-tailed prairie dog in North-central Colorado. *Amer. Midl. Nat.*, 75(3):292-316.

Timm, RA., and RJ. Johnson. 1982. Fifth Great Plains Wildlife Damage Control Workshop. Institute of Agri. and Nat. Res., University of Nebraska, Lincoln. 300 pp.

Uresk, D.W., G.L. Schenbeck, R. Cefkin., technical coordinators, 1988. Eighth Great Plains Wildlife Damage Control Workshop Proceedings. General Technical Report RM-154. Fort Collins, Co. USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station; 231 pp.

