BLACK-TAILED PRAIRIE DOG CONSERVATION PLAN

HIGHLANDS RANCH
Metro District

Approved by the Highlands Ranch Metro District Board of Directors

ACKNOWLEDGEMENTS

The Black-tailed Prairie Dog Conservation Plan was updated,
under the direction of the Highlands Ranch Metro District
Board of Directors, by the staff of the Highlands Ranch Metro District.

The Metro District Board of Directors
approved this updated plan in January 2023.
The Board approved the original plan on Aug. 31, 2010.

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Contributing Partners
Colorado Parks and Wildlife
Douglas County Health Department

This plan is scheduled to be reviewed every five years.

TABLE OF CONTENTS

Introduction

Residents of Highlands Ranch—and most Coloradans—love wildlife and enjoy having opportunities to see nature close at hand. With an integral system of natural areas and the nearby 8,200-acre Backcountry Wilderness Area, Highlands Ranch residents are well situated to view wildlife such as songbirds and hawks, deer and elk, rabbits, and several colonies of prairie dogs.

Black-tailed prairie dogs are most commonly found in the upland natural areas of Highlands Ranch. They are a keystone species, as their burrows provide homes for many other species of wildlife, and they are a food source for many predators.

Having prairie dogs living close to where many people live and work can present challenges — for both animals and people. If residents are going to be able to continue seeing prairie dogs and the other wildlife species that depend on them, and if conflicts with people are to be reduced, then prairie dogs must be carefully managed. This management process hopes to enhance and maintain ecological diversity in natural areas and will help shift the distribution of prairie dog towns, so that they only remain in suitable areas.

This plan was created as a guide to conserving prairie dogs while maintaining healthy ecosystems that provide for a multitude of wildlife in Highlands Ranch. The plan also details steps that the Highlands Ranch Metro District will take to conserve prairie dogs and work to reduce conflicts with people.

Section 1

Prairie Dogs: A key species facing declining numbers

Black-tailed prairie dogs *(Cynomys ludovicianus)* are native to the Great Plains of North America and are considered an important species in natural short grass prairie ecosystems. They are considered an integral part of the food chain for predators such as coyotes, foxes, raptors, and the endangered black-footed ferret. Prairie dog burrows often provide homes for burrowing owls, cottontail rabbits, rattlesnakes, and tiger salamanders, to name a few.

During the past several decades, however, the number of prairie dogs has declined as their habitat has been displaced by development and agriculture.

With the development of houses, roads, and parks in Highlands Ranch, natural areas have become fragmented, including those that are home to prairie dogs. Not all of these remnant natural areas are large enough or otherwise suitable for sustaining prairie dogs. This plan outlines steps to reduce human/animal conflicts, while maintaining prairie dogs on suitable sites that sustain species and ecological diversity. Over time colonies on sites that are poorly suited will be shifted to more suitable sites and all colonies will be carefully managed.

The following outlines the differences between prairie dog colonies in urban settings such as Highlands Ranch, and more rural settings with contiguous ecosystems.

Urban/Suburban Settings, *Fragmented Ecosystems*

Prairie dogs live in small, narrow and fragmented habitat blocks, surrounded by development, which often results in:

- Insufficient predators, such as coyotes, hawks, and eagles, to keep in balance expanding numbers of prairie dogs.
- Few nearby areas for expanding populations to colonize, leading to populations exceeding carrying capacity of the land.
- Degradation of natural resources.
- Less contribution to other wildlife from prairie dog burrows.
- Close contact with humans and damage to private and public property, which often requires management.
- Education and viewing opportunities for many species of wildlife.

Rural Settings, *Contiguous Ecosystems*

Prairie dogs live in large, contiguous prairie ecosystems free of most barriers, which may result in:

- Sufficient predators to control prairie dog populations.
- Adequate area for natural dispersal, helping keep carrying capacities in check.
- Increased plant diversity.
- Burrows and natural changes to landscape by prairie dogs having beneficial role in a natural prairie ecosystem.
- Limited contact with humans and minimal destruction of private property; management is dependent on land use designation.

Section 2

Open Space Management Goals: Managing healthy natural systems

The Highlands Ranch open space system integrates natural open space areas, trail corridors and wildlife corridors within the larger community. While providing suitable habitat for many species of wildlife, most of these natural areas also function as part of the urban drainage system, helping to reduce the risk of flooding.

The primary overall goals of the Metro District in managing the open space are:

1. To manage designated open space areas as natural systems, encouraging and enhancing healthy balanced ecosystems.

2. To manage outdoor recreation activities that occurs in open space to ensure that they are safe, enjoyable, and have minimal impact on natural resources.

3. To manage open space as a storm drainage system to prevent erosion, control runoff and enhance riparian/wetland areas.

Detailed information about the Metro District Open Space vision, goals and strategic actions can be reviewed on the Metro District's website at highlandsranch.org.

Section 3

Prairie Dog Conservation Guidelines

In accordance with the Metro District open space management goals, prairie dog populations will be conserved with the following objectives:

- minimize health or safety hazards
- manage natural areas for species and ecosystem diversity
- maintain healthy prairie dog colonies
- minimize damage to public and private property
- minimize possibilities for future conflicts between prairie dogs and humans

Managing a Prairie Dog Colony

The following guidelines will be used to determine when it is appropriate to manage a given situation. Combinations of these factors will always be considered when determining the need to manage prairie dogs.

1. Prairie dog population exceeds carrying capacity and/or results in destruction of natural resources

   When there is 20% bare ground within a colony's boundary, this indicates the carrying capacity within that specific geographic area may have been met or exceeded. If the population exceeds 50 prairie dogs per hectare (20 per acre), this is also a good indicator that the carrying capacity may have been exceeded in an area (Seery 1997). Site-specific analysis will determine if natural resources are being destroyed.

   When prairie dog populations exceed carrying capacities, the prairie dogs are subjected to increased stress. The lack of predators, high levels of outdoor recreation use of open space, and conflicts with adjacent residential and commercial properties, dictate that prairie dog populations (located in suitable sites as defined in Section 4), be best managed at 80% or less of the carrying capacity for that specific site.

2. Sustaining private and landscaped property and trail buffer zones

   Burrows and prairie dogs located within 50 feet of private property or landscaped areas, within six feet of trails, and associated burrows displaying above ground evidence of habit trails leading to private property or trails, will be routinely removed as an ongoing management activity, using the most cost effective means available, without public notification.

3. Human Health Hazard

   Prairie dog colonies will be closely monitored by Metro District open space staff for evidence of plague or other communicable disease. If any evidence is noted, it will be reported to the Douglas County Health Department, Colorado Department of Public Health and Environment (CDPHE), and Colorado Parks and Wildlife (CPW).

4. Noxious weed invasion of prairie dog towns

   Prairie dog colonies, which can present ideal conditions for noxious weed growth, will be inventoried, monitored and treated on a regular basis to minimize noxious weed invasion. Mowing, trimming, removal of weeds and other mechanical control methods will be the primary means of eradicating noxious weeds in and around prairie dog towns. Use of herbicides will be considered on a case-by-case basis after consulting with CPW and the Douglas County Weed Inspector. The Metro District's Integrated Pest Management Plan can be viewed on the Metro District's website at highlandsranch.org.

5. Planned Development

   Removing or relocating a prairie dog colony from Metro District's properties, when deemed necessary by staff, may occur up to one year before an area is developed or slated for any construction activity including trails, parks, and utility improvements. Where there is a high risk that the area will be reinhabited by nearby colonies, the colony will be removed as late as possible before construction. Where risk of recolonization is low, early removal of the colony is preferred.

6. Passive Management

   Increased natural predation of prairie dogs will be promoted by enhancing natural diversity by developing a seed mix of taller grasses for areas in and adjacent to prairie dog colonies, and by enhancing wildlife corridors and riparian areas where feasible. Predation by raptors will be encouraged by planting trees in wetter areas and installing artificial perch sites where needed. Natural barriers made of earthen berms planted with tall grasses and shrubs will be used as barriers where appropriate and sustainable. Staff will discourage human and pet contacts with prairie dogs through educational contacts, appropriate signage and by incorporating this topic into the Metro District's Outdoor Education Program.

Property Acceptance

Using the criteria outlined in this section, properties being conveyed to the Metro District will be evaluated and designated as suitable or unsuitable (see Section 4) for meeting the Metro District's long-term goals for prairie dog conservation.

If a site is designated as unsuitable, prairie dogs inhabiting that site must be removed before that property is accepted by the Metro District and the cost of their removal may be paid by the landowner or developer to the Metro District, who will carry it out.

If the landowner will be carrying out the removal, the Metro District will work with the landowner to determine the most appropriate means of removal, to obtain required permits, and to identify possible relocation sites. All costs incurred with prairie dog removal (e.g., public meetings, trapping, fumigation, permits, etc.) will be the responsibility of the landowner or developer.

Management Action Protocol

As outlined in the Guidelines for Managing a Prairie Dog Colony; to encourage natural predation of prairie dogs, the Metro District will continue to create features such as natural barriers, artificial raptor perches, tree plantings for future raptor perches, and other plantings to provide additional cover for predators.

At times prairie dog towns will need to be managed to fulfill the goals and objectives described in Sections 2 and 3 of this plan. When managing a prairie dog colony's population, the following protocol and options will be used:

1. Relocation or removal of prairie dogs will not occur during the birthing, nursing, and early rearing period from March through May. Relocation or removal of 10 or fewer prairie dogs will be scrutinized closely to determine if it is prudent to relocate the animals. This provision reflects both the lower survival associated with small relocations and the disproportionate administrative and fiscal burden for the Metro District and CPW in relation to the ecological and societal benefit.

2. If relocation to a designated release site in Metro District open space is not practical due to insufficient capacity or unsuitability of available sites, the Metro District shall make a reasonable effort to identify appropriate and cost-effective release sites.

3. The Metro District open space staff will determine the method of capture in a given situation based on past methods used on that colony, budgetary constraints, time of year, weather conditions, and geographic and topographic conditions of the colony. Efforts to use live trapping will be considered exhausted if they have been unsuccessful for a five-day period.

   Burrow Flushing - To ensure funds allocated for prairie dog management are spent in a cost-effective manner, the Metro District will burrow flush up to two times in any area. If after the first burrow flush at least 50% of the animals targeted for relocation are not captured, a second flush will not be conducted. If burrow flushing efforts fail to capture the targeted number of animals to manage a colony, lethal control may be used to bring a colony within the carrying capacity of the land.

4. Wild-to-wild relocation is the preferred option in all cases except when plague or other communicable disease is present. Reasonable attempts to arrange a wild-to-wild relocation must be explored before other options are utilized. Prairie dogs may be relocated only if the following provisions as outlined in CPW's permit and CRS 35-7-203 are met:

    - Suitable recipient site
    - Contact CPW District Wildlife Manager
    - Agreement with donor and recipient
    - Plague is not known
    - County Commissioner approvals
    - Letter of "non-objection" from FDA
    - CPW biological and social impact evaluation
    - Appropriate permits
    - Donor and recipient sites dusted as required by regulations

    (The complete relocation permit can be viewed at cpw.state.co.us)

5. Delivery to Conservation Programs

    When it is appropriate to manage a site, but relocation sites are not available, the Metro District will consider other environmentally sound options as recommended by CPW and other agencies. Options include removing prairie dogs and giving them to the U.S. Fish and Wildlife Service's National Black-footed Ferret Conservation Center in support of the Black-footed Ferret Recovery Program. The second option would be to deliver prairie dogs to a Raptor Rehabilitation Program.

    In both of these options, prairie dogs would be euthanized and used as a food source for raptors and Black-footed Ferrets. For more information on these programs to save these endangered and protected species see blackfootedferret.org. Some of the protocols and options include:

    a) Wild to Black-footed Ferret Program

        - Research to identify possible relocation sites
        - Contact CPW District Wildlife Manager
        - Plague is not known
        - Coordinate with USFWS quarantine facilities
        - Appropriate permits from CPW
        - Donor sites dusted as required by regulations
        - Live delivery of prairie dogs and euthanized at conservation site

b) Wild to Raptor Program

- Research to identify possible relocation sites
- Contact CPW District Wildlife Manager
- Plague is not known
- Letter of “non-objection” from FDA
- Appropriate permits from CPW
- Donor sites dusted if required by regulations*
- Prairie dogs euthanized on-site and delivered frozen

**Raptor programs will not accept dusted animals.*

6. Lethal Control

   The Metro District may retain the services of a professional exterminator to eradicate all or part of a prairie dog colony on Metro District-owned property. Acceptable methods are limited to the use of fumigants and poison baits approved by the U.S. Environmental Protection Agency (EPA).

7. Public Notification

   Before taking action to manage prairie dog populations within colonies, the Metro District will post the planned management activities on its website highlandsranch.org. This posting will occur annually, if there are planned management activities that year, at least 30 days before implementation. The Metro District will also provide public notification when required by other regulatory agencies or by law. As cited in recommendation #1 above, notification is not required to sustain buffer zones unless required by other regulatory agencies or by law. When operating within the policies and guidelines identified in this conservation plan, this will be the only public notification provided. If there are activities that are outside the current parameters outlined in this conservation plan, the Metro District Board of Directors will determine the proper public notification for that activity.

8. Control of Prairie Dogs That Disperse onto Land Not Owned by the Metro District

   The Metro District may exterminate without public notice, prairie dogs that disperse from the Metro District’s land onto adjacent or nearby land only with permission of the property owner and pursuant to a written request by the property owner.

   Property owners have a responsibility to protect their property from prairie dogs by erecting and maintaining barriers on their fence in accordance with the covenants of the Highlands Ranch Community Association (HRCA). The Metro District will not perform this service if the property owner has not taken appropriate action to protect their property from prairie dogs. Lethal control shall be limited to use of fumigants and poison baits approved by the EPA. The property owner will be responsible for destroying any burrows on their property.

9. Control of Prairie Dogs That Disperse onto Public Land

   When prairie dogs disperse out of a managed colony to a new site on public land, the Metro District will evaluate that site using the suitability index in Section 4. Factors in Section 3 such as human health and safety will also be considered. If the new site is determined to be unsuitable for a new colony, the Metro District may remove, relocate or exterminate those prairie dogs per the management action protocol. If there is an immediate human health or safety risk, public notification may occur after removal, as part of the following year's fact sheet.

10. Human Health Hazards

    On a regular basis, the Metro District open space staff will monitor prairie dog colonies for possible presence of the plague or other communicable disease. If there is any indication of disease within a prairie dog colony, subsequent steps will be coordinated through the Douglas County Health Department. Further management actions dealing with the affected area will only be completed after consulting with the CDPHE and notifying CPW.

    The Metro District, working with the Douglas County Health Department, will post signs notifying trail and area users that the prairie dog colony may be infected with a disease and notify residents adjacent to the colony in writing discouraging all human and pet contact with prairie dogs in the area. For more information on infectious diseases visit Douglas County Health Department's website at: douglas.co.us/health-department/.

Section 4

Long-Term Management Areas for Prairie Dogs: Using a suitability index

This suitability index was developed in partnership with CPW to establish criteria for designating and maintaining more appropriate, long-term prairie dog habitat areas within the open space in urban environments. Areas that meet these criteria should help sustain healthy prairie dog colonies and minimize conflicts. Whether prairie dogs are currently present or not, is not a factor in determining the suitability of an area as a long-term management site. Carrying capacity of a given prairie dog colony site is based on: the general health of the colony, the site size in acres, ability of the colony to expand, available herbaceous vegetation, percentage of bare ground, minimal infestation of aggressive non-native species. The Metro District's goal is to maintain prairie dog colonies at an appropriate carrying capacity of the land.

The following are the criteria included in the suitability index:

- **GEOGRAPHY:** The land area should be enclosed by substantial natural or human introduced barriers, such as drainage corridors, steep slopes or embankments, and

densely vegetated areas such as tall grass, tree stands, or heavy brush. To reduce conflicts with private property owners, barriers should create a buffer between a prairie dog site and any private property. Prairie dog colony areas, however, should allow for natural dispersal of animals within the colony. Large circular areas are best for dispersal. Narrow rectangular areas are generally considered as poor habitat sites. The colony area should be located away from trail systems to reduce conflicts with trail users and pets. In an urban environment, destruction of private property, human health and safety hazards are also considered.

- **TOPOGRAPHY:** Slopes less than 10% are better suited for sustaining prairie dog colonies.

- **VEGETATION:** Herbaceous cover from 30% to 90% is considered optimal in Clippinger's 1989 model for black-tailed prairie dog habitat. To provide optimal winter nutrition, vegetation should consist of perennial grasses, rather than annual weeds or grasses. Optimal vegetation height for prairie dog habitat is between 2 and 10 inches (Clippinger 1989). To maintain the viability of prairie dogs and other wildlife species in natural areas, while minimizing human conflict, and soil erosion, prairie dog sites should be managed to have:

    - 80% ground cover to minimize soil loss from water and wind

    - Weed populations less than 50% of the total vegetative cover (aggressive non-native species are to be minimized)

    - Perennial grasses maintained greater than, or equal to, 50% of the site

  Ideally, land with a healthy stand of short grasses as outlined above, can support about 16 to 20 prairie dogs per acre.

- **SOIL:** Soil structure is important to the success or failure of a relocation effort. Sand content of the soil should be less than 70% (Clippinger 1989).

- **PREDATOR POPULATIONS:** Controlling prairie dog populations can help prevent habitat destruction and may subsequently prevent prairie dogs from looking elsewhere for food sources. Prairie dog colonies should be maintained in areas where natural predation from foxes, coyotes, hawks, and snakes is encouraged. Predator habitat may include perch sites for raptors or wildlife corridors consisting of steep embankments or heavily vegetated areas for coyotes, foxes and other predators.

Section 5
Community Participation/Education

1. The Metro District open space and park ranger staff is committed to educating and involving the community on prairie dog management issues through mailings, signs, informational literature, online resources, and public meetings. Park rangers will include prairie dogs as a wildlife topic in local school resource related educational programs through the Metro District's Outdoor Education Program.

2. Park rangers and park hosts will be trained to offer residents interpretive information about the value of prairie dogs in natural areas, and in proper actions to be taken when sick or injured animals are identified. Volunteers may be trained to help monitor prairie dog colonies and to assist open space staff as appropriate in wild-to-wild relocations when approved by CPW. Volunteers may participate in these activities only when they have been trained in precautionary measures of handling prairie dogs, live catch procedures, overview of diseases that can be transmitted during these procedures, disease symptom recognition, and release site preparation.

Section 6
Monitoring and Evaluation

The Metro District open space staff will evaluate this conservation plan annually, and the Metro District Board of Directors will review it at least every five years. The staff will maintain current inventories of prairie dog colonies, dimensions of each colony site, population and burrow counts, management objectives, and recommend management actions for individual colonies. Colony sites and populations will be inventoried and evaluated twice annually.

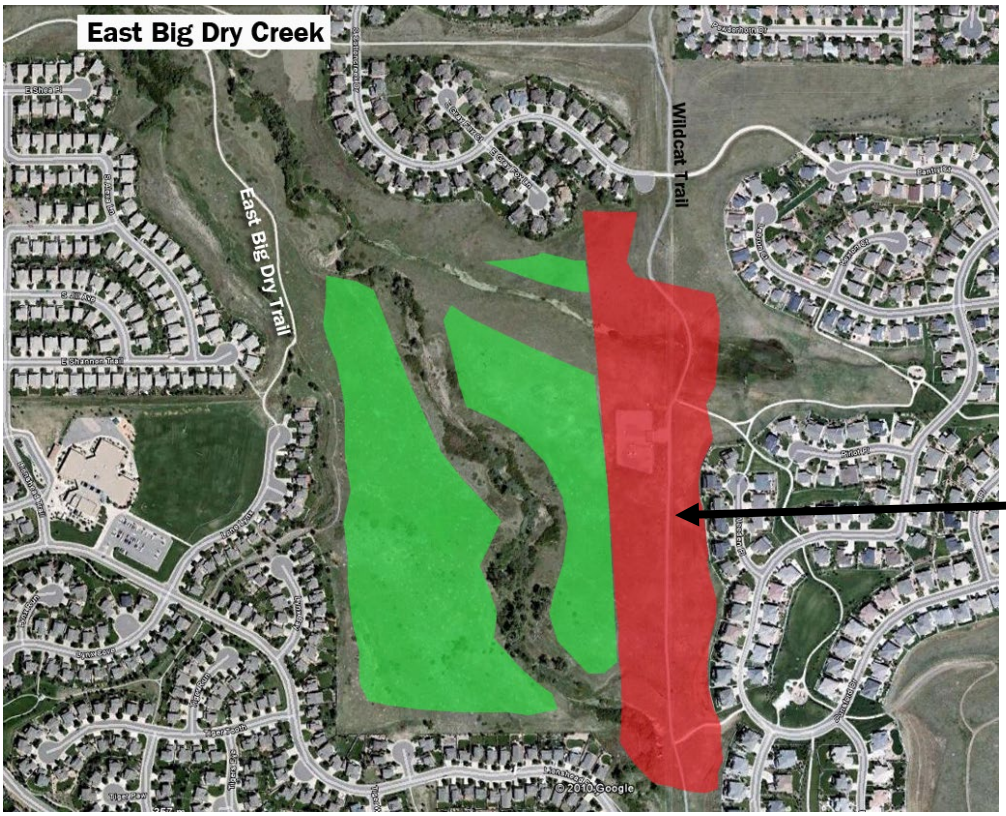
If the status of the Black-tailed prairie dog is changed by the U.S. Fish and Wildlife Service, this plan will be modified accordingly.

Section 7

Prairie Dog Colony Sites

Areas designated as suitable in 2010

- **East Big Dry Creek – East and North**



150’ Buffer Zone

Unsuitable for Prairie Dogs

Suitable for Prairie Dogs

- **Northridge – Dad Clark Gulch**

Areas designated unsuitable for Prairie Dogs in 2008:

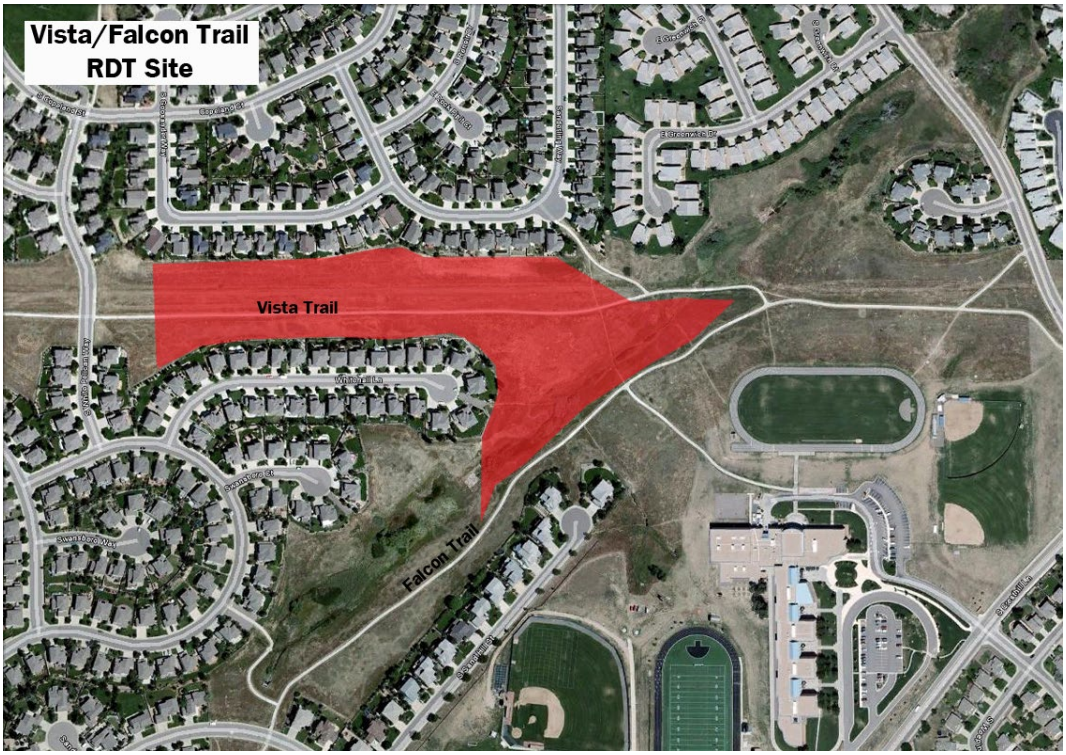
The following sites have been designated as unsuitable habitat for prairie dogs, as identified in Section 4 of this plan. Prairie dogs in these areas will be completely removed and routinely monitored. Prairie dogs that relocate back in to these areas will be removed using any method, without public notification, as part of the ongoing and routine management of these areas.

- **Spring Gulch Natural Area from Hyacinth Road to Stone Mountain Drive**

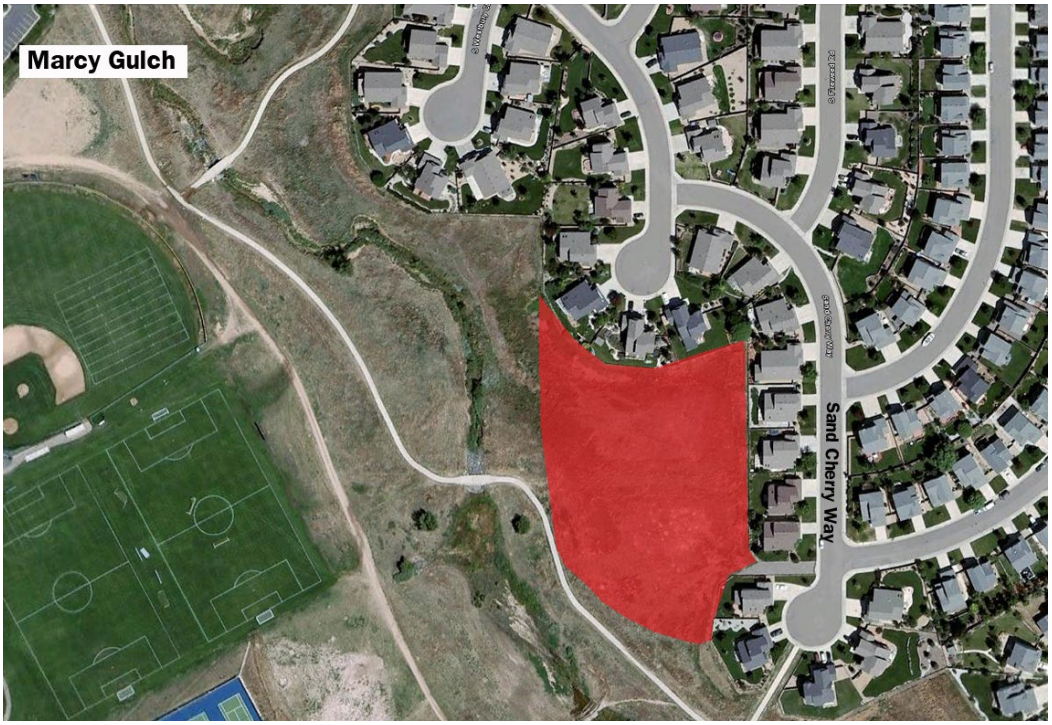
- **Spring Gulch Natural Area from Stone Mountain Drive to Weathersfield Way**

Areas Designated as unsuitable in 2010:

- **Vista Trail – East of White Pelican Way**



- **Marcy Gulch – Sand Cherry Way**



- **Spring Gulch – Woodrose Court**

- **Big Dry Creek at Big Dry Creek Park**

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Clippinger,N.W. 1989. Habitat Suitability index models: black—tailed prairie dog. *U.S. Fish and Wildlife Service Biological Report;* 82 (10.156):21p.

Cully,J.F. 1989. Plague in prairie dog ecosystems: Importance for black-footed ferret management. In the prairie ecosystem: Managing for biological diversity. *Montana BLM Wildlife Technical Bulletin No.2* p.47-55

Miller, B.J. 1995b. The History of the Prairie Dog “Problem”. Paper presented to the Society for Conservation Biology Meeting, June 9, 1995. Fort Collins, CO, USA

Montana Natural Heritage Program. 2000. Prairie Dog Colony Observation Form

Prairie Dog Informational Links

Colorado Parks and Wildlife

Black-tailed Prairie Dog Relocation Facts
This is a question and answer site relating to the Black-tailed Prairie dog. From this site you can access additional information.
https://cpw.state.co.us/learn/Pages/SOC-Black-tailedPrairieDogRelocationFacts.aspx

Black-tailed Prairie Dog Overview
https://cpw.state.co.us/learn/Pages/SOC-Black-tailedPrairieDog.aspx

Prairie Dog Management Plans: Cities of Lafayette, Boulder, Broomfield and Ft. Collins.

Note the differences in contiguous vs. fragmented habitats in each of these agency plans.

https://www.lafayetteco.gov/DocumentCenter/View/25831/Prairie-Dog-Management-Policy_November-2019

https://bouldercolorado.gov/services/prairie-dog-conservation-and-management

https://www.broomfield.org/DocumentCenter/View/1385/P_Dog_Policy-8-15-03-GW-acres

https://www.fcgov.com/naturalareas/pdf/wm-guidelines17.pdf?1504276461

Roe Ecological Services

Roe Ecological Services are a private for-profit organization. These procedures are for information only and have not been adopted by the Colorado Division of Wildlife.

Recommended Prairie dog relocation guidelines:
https://yourwildlife.com/2018/02/prairie-dog-relocation