



**City of Boulder  
Open Space and Mountain Parks  
Grassland Plan**

**Conservation of Black-tailed Prairie Dogs**

The Grassland Plan focuses action on eight (8) components of OSMP grasslands including one referred to as “Black-tailed Prairie Dogs and Associates”. The identification of this prairie dog-based target reflects the ecological importance of prairie dogs in creating and sustaining distinctive ecological conditions on OSMP grasslands. In order to be successfully implemented, OSMP must take action to conserve prairie dogs, their associates, *and* the seven other conservation targets. These targets include agricultural operations and native grasslands uninhabited by prairie dogs.

The Grassland Plan provides a framework to conserve prairie dogs and their associates with the other conservation targets by:

1. Establishing viability standards and conservation objectives for all eight targets
2. Defining land management designations and applying them to every prairie dog colony mapped on OSMP lands
3. Developing criteria to guide relocation of prairie dogs to, from, and within the OSMP land system

**Viability Standards and Conservation Objectives**

The Grassland Plan describes acceptable ranges for “key attributes” of all eight conservation targets. Key attributes are important characteristics of the targets like:

- Presence and abundance of rare, sensitive or particularly important plants or animals
- Amount of exposed bare ground
- Ground cover by noxious weeds
- Diversity of grassland birds
- Size of habitat blocks

Successful conservation in the Grassland Planning Area occurs when OSMP simultaneously achieves the desired conditions for *all* attributes of *all* the targets. This means that conservation and management actions need to consider the effects on all targets. Conserving prairie dogs in the context of degraded grasslands would not be considered success. Nor would maintaining the key attributes of the mixed grass prairie without ensuring that prairie dogs and their associates are also being conserved. The viability standards for the grassland plan, including the black-tailed prairie dog and associates target, are described in Chapter II of the Grassland Plan and described in detail in Appendix D.

**Management Designation**

Open Space and Mountain Parks staff defined the following management designations for any prairie dog colonies that have been mapped since 1996- whether or not they are currently occupied. These management designations provide a spectrum of protection for prairie dogs and the other Grassland Plan conservation targets. The five management designations are attached.

- **Prairie dog Conservation Areas** serve primarily to conserve prairie dogs and provide receiving sites for colonies in removal and transition areas. Based on updates following the 2015 mapping season, 583 acres are designated as Prairie Dog Conservation Areas.
- **Grassland Preserves** comprise approximately 8,000 acres of the Grassland Planning Area.

OSMP has established a range of acceptable prairie dog occupancy between 10 and 26 percent. This means that the Grassland Preserves will provide conservation of between 800 and 2,100 acres of active prairie dog colonies. These areas provide the best opportunities for natural movement of prairie dogs and support sensitive associated species such as Ferruginous Hawk, Golden Eagle and Burrowing Owl. Grassland Preserves also offer the opportunity for accepting relocated prairie dogs if conditions meet the viability standards and relocation criteria.

- **Multiple Objective Areas** provide locations where prairie dogs will be allowed to persist. No relocation is allowed in MOAs. Following the 2015 mapping effort, 755 acres of mapped colonies are included in the Multiple Objective Area designation.
- **Transition and Removal Areas** represent properties where conservation or restoration of other grassland targets is the primary focus. Relocation away from these areas will be undertaken when receiving sites (PCA or GP) are available and it is feasible. In removal areas, lethal control could be used if other methods of removal are not possible 1,463 acres included in mapping through 2015 have been designated as Transition (1053) or Removal (410) areas.

The following table summarizes some of the key management actions associated with each of the designations.

<b>Management Designation</b>	<b>Accept Relocated Prairie Dogs</b>	<b>Removal</b>	<b>Removal to Protect Irrigation</b>	<b>Actively Restore Vegetation</b>
Prairie Dog Conservation Area	x	-	x	
Grassland Preserve	x†	x *	x	x
Multiple Objective Areas	-	-	x	x
Transition Areas	-	X	x	x
Removal Areas	-	X	x	x

†If vegetation meets standards set in relocation criteria (see section below)

\*If occupation and vegetative conditions exceed the levels defined in the viability standards

Staff developed criteria to place each prairie dog colony mapped on OSMP into one of the designations. The designation criteria consider the recorded presence of sensitive plant or animal species, habitat suitability, conflicts with agriculture, or other city services, and restoration efforts. The designation criteria are below.

Management designations were developed for the approximately 6237 acres occupied by prairie dog colonies since 1996. Lands not occupied by prairie dogs during 1996-2015 or included in the Grassland Preserves did not receive prairie dog management designations. A criteria-based approach provides OSMP with the ability to repeat the same method when determining appropriate management for “new” colonies that result from dispersal, or new acquisitions. Total acres of designated prairie dog colonies are given in the table below

Prairie Dog Conservation Area .....	583*
Grassland Preserve.....	8,000 (3436* of prairie dog colonies have been mapped within Grassland Preserves)
Multiple Objective Area .....	755*
Transition Area.....	1053*
Removal Area .....	410*

\* These numbers reflect the Maximum Extent of occupied Black-tailed Prairie Dogs as of the end of the 2015 mapping effort. This is a conglomeration of all occupation over the past 19 years (1996-2015). This is not a representation of what is actively occupied.

Recent die-offs due to sylvatic plague have substantially reduced the acres occupied by prairie dogs in some parts of the OSMP system. As a result, the number of occupied acres in these management designations may now be lower than the numbers given in the table above. Experience from managing through previous plague cycles suggests that higher levels of occupation will be reestablished in the future.

**Relocation Criteria**

OSMP developed relocation criteria to ensure that conditions in areas accepting relocated prairie dogs will be able to sustain prairie dog populations, and associated species. Separate relocation criteria were developed for Prairie Dog Conservation Areas and Grassland Preserves.

**Prairie Dog Conservation Areas**

Relocation criteria for Prairie Dog Conservation Areas are simple and address the most basic level of suitability as a receiving site. These criteria are:

1. Existing burrow structure or evidence of previous occupation
2. Relocation will follow regulations set out in City of Boulder’s Wildlife Protection Ordinance and associated city policies
3. All appropriate state, federal permits obtained and conditions of permits followed

**Grassland Preserves**

Criteria developed for Grassland Preserves are more extensive and detailed. These criteria are intended to ensure that relocation into grassland preserves is done in a way that is likely to allow vegetation and habitats to recover when necessary from the effects of long-term prairie dog occupation. This will increase the quality of habitat where prairie dogs will be released and increase conservation of other grassland plan targets being conserved in the Grassland Preserves. These criteria are:

1. Existing burrow structure or evidence of previous occupation
2. Relocation will follow regulations set out in City of Boulder’s Wildlife Protection Ordinance and associated city policies
3. All appropriate state, federal permits obtained and conditions of permits followed
4. Grassland preserve is below 10% threshold occupancy- as identified in Grassland Ecosystem Management Plan Black-tailed Prairie Dog and Associates viability standards
5. Vegetation and habitat within receiving site meets the following minimum standards based upon data from at least three transects within each habitat type on the receiving site:
  - a. Average bare ground no more than 22% cover
  - b. Average native species richness at least 18 species (with exception of non-native grassland patches)
  - c. Average relative cover of native perennial graminoid species at least 60%
  - d. Average sensitive/conservative species richness at least 4 species (with exception of non-native grassland patches)

6. Majority of receiving site has been identified as exhibiting Good or Very Good Habitat Suitability in OSMP's prairie dog Habitat Suitability Model. Relocation should begin in areas with highest suitability.

## **Description of Prairie Dog Management Designations**

### **Grassland Preserves (GP)**

Grassland Preserves are areas where prairie dogs and their associated species are part of large and ecologically diverse grassland habitat blocks. These areas are considered the best opportunity to conserve prairie dogs and their associated species. In most cases, prairie dogs will be allowed to persist without removal in Grassland Preserves. However, removal will be allowed for the purposes of maintaining existing irrigation facilities such as headgates, ditches, lateral ditches, reservoirs and irrigated fields. In addition, to ensure protection of habitat within Grassland Preserves, the need for limited removal from a Grassland Preserve will be assessed if prairie dogs occupy more than 26% of the Grassland Preserve (i.e. viability drops below “Good”) and indicators of vegetation composition fall below thresholds identified in relocation criteria. Inactive, previously occupied colonies in Grassland Preserves could serve as relocation receiving sites (where there is an existing burrow infrastructure) and if the area meets relocation criteria. However, prairie dogs will not be relocated into irrigated fields nested within Grassland Preserves. Following a die-off or other disappearance of prairie dogs from an area, prairie dogs could be excluded to allow for habitat restoration or to protect existing habitat restoration projects.

While Grassland Preserves contain significant extents of habitat suitable for prairie dogs, they also contain less suitable habitat.

### **Prairie Dog Conservation Areas (PCAs)**

PCAs are areas where the conservation of the prairie dog is the primary management objective and are managed opportunistically for associated species. These areas would serve as receiving sites for relocation with the minimum requirements described in the relocation criteria. No removal of prairie dogs would occur in PCAs except for the purpose of maintaining an existing irrigation facility such as a headgate, ditch, lateral ditch, reservoir, or irrigated field. Prairie dogs will not be relocated into irrigated fields within PCAs.

### **Multiple Objective Areas (MOA)**

In Multiple Objective Areas, preservation of prairie dogs and their associated community is one of several management objectives. Prairie dogs will be allowed to persist without removal except for the purpose of maintaining existing irrigation facilities such as headgates, ditches, lateral ditches, reservoirs, or irrigated fields. MOAs will not be used as receiving sites for relocated prairie dogs. Exclusion of prairie dogs attempting to re-colonize could occur to allow habitat recovery.

### **Transition Areas**

Transition areas are grassland areas where the preservation of conservation targets other than the prairie dog and associated community takes precedence. Prairie dogs may inhabit transition areas, but will be relocated away from the property when feasible (i.e. relocation receiving site available). Following relocation, die-off, or other natural events such as dispersal, that lead to a reduction of the population and result in uninhabited areas, re-colonization could be prevented or discouraged using barriers, re-seeding, grading, burrow destruction, passive relocation, or other methods available to the department. After efforts are made to trap and relocate all remaining prairie dogs, removal through lethal control will be allowed in accordance with applicable regulations, and policies, and if numbers do not exceed 20 individuals. Removal would be allowed at any time for maintenance of existing irrigation facilities such as a headgate, ditch, lateral ditch, reservoir or irrigated field. Continued irrigation will also be allowed in irrigated fields regardless of prairie dog occupancy.

## **Removal Areas**

In removal areas, prairie dogs are incompatible with OSMP management objectives. The designation of a property as a Removal Area provides the option to remove prairie dogs from the property in accordance with applicable regulations and policies. Following removal, efforts would occur to prevent re-colonization including restoration or irrigation of the property, destruction of burrow system, exclusion structures, etc. Continued irrigation will be allowed in irrigated fields regardless of prairie dog occupancy.

## **Prairie Dog Colony Designation Criteria**

### **Criteria for Designation as a Grassland Preserve:**

1. Current or recent history of multiple prairie dog colonies (complex of colonies) within grassland block
2. Extensive areas of habitat ranked “Good Habitat Suitability” or “Very Good Habitat Suitability”
3. Large block of grassland habitat
4. Minimal irrigated agricultural use on property that conflicts with prairie dog occupancy
5. Minimal surrounding land use conflicts
6. Minimal conflict with other Grassland Plan targets
7. Distant from urban area (relatively speaking)
8. Not bisected by roads
9. Proximity to other lands managed for grassland conservation, or for prairie dogs and associated species

### **Criteria for Designation in Other Management Categories:**

1. Sensitive associated species known to occur or suspected to occur in the colony (Sensitive associated species are ferruginous hawk, rough-legged hawk, northern harrier, golden eagle, American badger and burrowing owl.)
2. Good or Very Good Habitat Suitability based on Ecological Habitat Suitability Model
3. No conflict with OSMP irrigated agricultural uses or other city department land uses
4. No significant recent restoration history or investment (completed within past 10 years or “in-progress” as defined by restoration criteria)
5. Directly adjacent to Grassland Preserve Area
6. No significant or rare plant communities intolerant of prairie dogs

- **Multiple Objective Area (MOA)**

- 5 or more criteria met, or criteria #3, #4, and #6 met, or presence of badger or nesting burrowing owls (regardless of number of criteria met)

- **Transition Area**

- 3-4 criteria met and criteria #3 or #4 or #6 not met

- **Removal Area**

- 0-2 criteria met

- **Prairie Dog Conservation Area:**

- Meets criteria #3, #4, #6, and landscape context, plant communities and other site characteristics make it appropriate.

The following exceptions apply to the designation criteria:

- If criterion #1 applies, colony cannot be designated a Removal Area.
- If presence of burrowing owl or badger is confirmed, colony must be designated as a

Grassland Preserve or Multiple Objective Area\*.

- If colony is irrigated agricultural land and is not embedded in a grassland preserve, it must be designated as either a transition area or removal area.

\*Burrowing owls tend to return each spring to the same areas to nest. However, there can be as much as a five year gap between nesting attempts. OSMP will annually evaluate prairie dog colonies designated under this condition to determine if they should be maintained as a MOA or Grassland Preserve. The determination will be based upon a variety of criteria including but not limited to the number of years since last use, reproductive success of last nesting attempt, level of human and dog activity.