

UTAH PRAIRIE DOG HABITAT MANAGEMENT GUIDE

*A guide to help private land owners manage their
lands for the benefit of Utah prairie dogs*



A Cooperative Effort By:
Utah Prairie Dog Recovery Team
U.S. Fish and Wildlife Service
Panoramaland Resource Conservation and Development (RC&D)

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INTRODUCTION

The purpose of this guide is to help private land owners manage their lands for the benefit of Utah prairie dogs. This guide was developed as a cooperative effort by the Utah Prairie Dog Recovery Team, the U.S. Fish and Wildlife Service (USFWS), and the Panoramaland Resource Conservation and Development (RC&D). We based this guide on the information and management prescriptions contained in the 2007 Draft Utah Prairie Dog Habitat Evaluation and Management Guide by Theodore P. Toombs and Stephen B. Monsen.

The protection and management of habitat for the Utah prairie dog is vital for the conservation and recovery of this federally threatened species. The Utah Prairie Dog Habitat Credits Exchange Program (UPDHCEP) provides an avenue for preserving important Utah prairie dog habitat on private lands. Habitat preservation is accomplished by willing landowners enrolling their lands into a perpetual conservation easement. The RC&D will hold the conservation easement in perpetuity, and will be able to sell habitat credits from these properties to developers—creating a conservation banking mechanism.

This guide is a management tool for the landowners who are interested in conservation easements under the UPDHCEP. Throughout this guide, we provide management prescriptions to preserve and maintain healthy, persistent Utah prairie dog populations. Landowners can incorporate these prescriptions into their existing grazing and agricultural practices, such as planting, fertilizing, weed control, irrigation, and harvesting, to achieve conservation benefits for Utah prairie dogs and comply with the terms of their conservation easements.

HABITAT MANAGEMENT GOALS

Conservation easements through the UPDHCEP will provide habitat preservation for Utah prairie dogs on private lands yet allow landowners to retain ownership and continue most agricultural practices. All private lands enrolled in the UPDHCEP must maintain baseline conditions as established in the baseline report. Baseline condition in this case means that the number of Utah prairie dogs and the property's habitat quality (Appendix 1) on the easement remains at or above the number of Utah prairie dogs and habitat quality that were on the land when the property was enrolled into the conservation easement program. The baseline condition of each property is fully described in the Baseline Inventory Report. This guide provides habitat management prescriptions and recommendations suitable to maintain baseline conditions and or achieve improved conditions that will help meet the conservation goals for Utah prairie dogs.

Conservation easements will be managed in a manner to ensure Utah prairie dog habitat conditions are improved. Utah prairie dogs forage primarily on grasses and forbs. Vegetation must be short to allow the prairie dogs to see approaching predators as well as have visual contact with other prairie dogs in the colony. Prairie dogs will avoid areas where brushy species dominate, and will eventually decline or disappear in areas invaded by brush. Therefore, the habitat must be managed to increase grasses and forbs and decrease brushy vegetation types and on their easement. Maintaining and managing for this type of habitat will increase the likelihood that Utah prairie dogs will persist on the conservation easement.

Utah prairie dogs require well-drained soils to excavate their burrow. Burrows must be deep enough to protect the Utah prairie dogs from predators and environmental and temperature

extremes. The land owner must practice good range stewardship and proper management of domestic livestock to protect soils.

CONSERVATION PRACTICES

Working with a biologist from a cooperating agency (such as the natural Resources Conservation Service (NRCS), USFWS, or UDWR), landowners will complete the Conserved Habitat Value Form included in Appendix 1. The RC&D will use the information provided on the form to determine which habitat components need to be improved on the conservation easement. RC&D will then work with the landowners to develop a management plan containing a number of prescriptions designed to improve Utah prairie dog habitat quality and quantity on the conservation easement.

Mandatory Conservation Measures

All properties enrolled in the conservation easement program must incorporate the following conservation measures into their land management activities:

É Limit the use of pesticides and herbicides within 100 feet of active Utah prairie dog burrows. The Utah Division of Wildlife Resources (UDWR) or USFWS will provide an approved list of herbicides and pesticides upon request.

É Avoid or minimize disturbance within Utah prairie dog occupied habitat during sensitive life stages, such as breeding and nursing (mid-March through mid-June). Occupied habitat is defined as any area where Utah prairie dogs are seen or heard, there is evidence of recent prairie dog activity (fresh digging, scat, fresh tracks), or an area with Utah prairie dog burrows .

É All practices will be planned and applied in a manner that will avoid or minimize adverse effects to other sensitive, threatened, or endangered species. If avoidance of impacts to other threatened or endangered species is not feasible, the landowner and RC&D will immediately notify the USFWS to determine the appropriate course of action to ensure compliance with the Endangered Species Act.

É Restoration activities will be monitored to assess the general habitat condition, use of the habitat by the species for which the conservation easement was established, progress of the land management prescriptions, and the Cooperator's satisfaction with the project. Based on the results of this monitoring, the land management prescriptions may be adjusted to account for change in habitat condition and use.

General Conservation Practices

There are a number of management prescriptions that landowners can incorporate into their existing grazing and agricultural practices to improve habitat conditions for Utah prairie dogs. Below is a list of some of these prescriptions, but others can be developed in conjunction with the RC&D to customize management options for the landowner:

1. Brush Treatments
2. Inter-seeding
3. Re-seeding

4. Irrigation Management
5. Grazing Management
6. Monitoring
7. Fencing
8. Barriers
9. Plague Management

Table 1 provides examples of possible goals and corresponding objectives. General conservation practices that address the goals and objectives are listed along with the applicable NRCS conservation practice codes (Appendix 2).

The remainder of this section highlights basic conservation practices used to improve Utah prairie dog habitat and important considerations for implementing these practices as part of a management prescription. The practices described can be used individually or in combination to develop a management prescription that is compatible with the landowner's grazing and agricultural operations.

Planting Practices

Utah prairie dog colonies are associated with a variety of plant communities and ecological sites. Utah prairie dogs require diverse plant mixtures to meet their nutrition requirements. See the Intermountain Planting Guide (USU-USDA-ARS 2001; available on-line at http://extension.usu.edu/files/publications/publication/pub_7717229.pdf) for seed mixes that will be most appropriate for the soil type found on your property. A mix of native and non-native plants is recommended on pastures or former cropland. Native shrub species should not be included in these mixes. Re-establishing native shrubs may be ecologically appropriate and attainable, but not recommended because, over time, shrubs will reduce habitat suitability for Utah prairie dogs. As previously stated, vegetation must be kept short to allow the prairie dogs to see approaching predators as well as have visual contact with other prairie dogs in the colony.

Seeding and planting can increase forage quantity and quality on Utah prairie dog-occupied sites and unoccupied sites that will be used for future translocations.

Conservation measures that must be followed during planting practices on a conservation easement are:

- The producer may not disk/plow deeper than 18 inches or with a frequency that would result in the removal of forage for the Utah prairie dog during the active season (March-October).
- Fallowing ground in concert with repeated disking for extended periods of time during the active season (March-October) is strongly discouraged as it may be detrimental to Utah prairie dog populations. Baseline vegetation conditions must be maintained and the activity must not harm Utah prairie dogs. Mechanical fallowing during the winter is allowed if needed for crop rotation.
- Ripping or sub-soiling is allowed if not deeper than 18 inches and if it is part of the past agricultural operation to break up plow layers or hard pans.

TABLE 1. CONSERVATION PRACTICES USED TO ACHIEVE HABITAT MANAGEMENT GOALS AND OBJECTIVES.

Goal	Objective	Purpose for Utah prairie dogs	General Practice	Applicable NRCS Conservation Practice Codes
Increase Plant Species Richness	Species Richness >20, 6 grass, 6 forb	Increase forage quantity, quality, and availability	Planting	315, 327, 328, 340, 342, 466, 512, 550, 643, 645
Increase Ground Cover	Ground cover 60%–100%		Grazing	528, 315, 378, 382, 516, 524, 614, 642
Increase Moisture-Rich Vegetation	Within 300 meters		Irrigation	430, 442, 449, 466, 516
Reduce Canopy Cover	Average shrub canopy cover 0–10%	Improve visual surveillance capability; decrease competition with grass and forbs	Brush management	314, 338, 645
	Vegetation height 4–8 inches		Grazing	528, 315
Barriers	0–1 sides barred to dispersal (within 2 km)	Allow dispersal	Reduce barriers	314, 315, 338, 528
	1–2 sides barred to dispersal (within 2 km)	Prevent spread of colony to undesirable locations	Add barriers	380, 382, 386, 601, 612
Reduce Disturbance	Exclude animals, people, or vehicles	Reduce disturbance	Exclusion	472
Plague Management	Prevent plague from decimating local population or spreading	Reduce mortality; maintain persistence	Allow dusting of burrows on affected and potentially affected colonies	None

Weed Management

Noxious weed control will facilitate restoration of rangelands or pasturelands, increase the ability of Utah prairie dogs to see predators and other Utah prairie dogs in the colony, and increase forage quantity and quality.

Conservation measures that must be followed when applying chemicals on a conservation easement are:

- Grantor may use herbicides as necessary for weed management and to sustain permitted agricultural uses on the Property, provided, however, that such substances shall not adversely affect the terrestrial ecosystems, shall not harm Utah prairie dogs, and their use shall be consistent with applicable labeling.
- No general broadcast use of pesticides or herbicides within 100 feet of active Utah prairie dog burrows. Limited spot treatment of chemicals is allowed (e.g. - spot treatment for weeds or the application of deltamethrin to reduce flea abundance)
- Consult with County and local USU Extension Offices for a list of the invasive species and noxious weeds in the area and recommendations to control or eliminate them.

Seeding

Seeding to improve most prairie dog sites will normally require reducing existing plant competition. For example, sites that support weeds or shrubs must be treated to remove the existing plants and weed seeds in the soil. Effectively eliminating some annual and most perennial weeds requires a series of treatments. A variety of measures, including the use of multiple herbicides and mechanical tillage, are often needed to control persistent perennial broadleaf weeds and some shrubs (see chemical guidelines above). Adequate time must be planned to schedule treatments during the season when plants are most vulnerable. Residual effects from herbicide application and soil tillage must be considered, as they obviously affect establishment of new seedlings. Conservation measures that must be followed when seeding on a conservation easement are:

- Pre-emergent herbicides can be applied and remain active for one or two years to control germinating seeds of many species (see chemical guideline above).
- Some non-sprouting species, principally shrubs, can be eliminated by mechanical mowing or soil tillage. However, most broadleaf herbs and grasses recover quickly after mowing, and must be uprooted or treated with chemicals to be eliminated. Noxious weeds often appear on farmlands and can be extremely difficult to control. Repeated treatments with different herbicides over one or two years are often necessary.
- In arid and semi-arid environments, it is important to use practices that conserve soil moisture and avoid excessive soil tillage that creates open and barren soils.

After weed removal and planting, litter should be retained on or near the soil surface.

Prescribed Grazing

Prairie dogs and livestock grazing are generally compatible; however, grazing can be beneficial or detrimental to Utah prairie dogs depending upon local conditions and timing. On highly productive sites where moisture is abundant and the growing season is long, grazing can be beneficial, or facultative, to Utah prairie dogs by increasing forage quality and reducing vegetation height and density. On low productivity sites or productive sites with high stocking rates, grazing can be competitive by reducing the quantity of forage available to Utah prairie dogs. Prescribed grazing should balance prairie dogs' need for visual surveillance with the need for sufficient forage quantity and quality. For example, resting pastures should be incorporated into grazing management if needed to sustain vegetation needs (and baseline conditions) for Utah prairie dogs. Conversely, grazing can be used to ensure that vegetation does not become too dense or tall for Utah prairie dogs.

To determine whether grazing is facultative or competitive, consult with a range specialist at NRCS or another cooperating agency. A grazing specialist can determine whether current livestock stocking rates are compatible with the site's ecological productivity. Grazing plans should adjust stocking rates, timing, and intensity to ensure that Utah prairie dogs have ample forage of sufficient quality (see Appendix I).

In general, most irrigated pastures will produce ample forage quantity for Utah prairie dogs throughout the growing season. The limiting factor for irrigated pastures may instead be vegetation height and density which can hamper visual surveillance. In these situations, use prescribed grazing to maintain the vegetation at the proper height and density without compromising forage quantity. If current stocking rates or grazing season allows the vegetation to grow too high or too dense, make the correct adjustments.

Managing prescribed grazing may be more challenging on non-irrigated pastures and rangelands. On these sites, grazing is more likely to be competitive. Summer grazing of non-irrigated rangeland negatively impacts foraging and weight gain in adult Utah prairie dogs. If grazing is competitive, the management prescription should seek to reduce this competition by lowering stocking rates or adjusting the season of use. Grazing may be competitive in dry years, but not in wet years, and when possible, management should adapt to changing conditions.

Conservation measures that must be followed for managing grazing on a conservation easement are:

- Grazing in wet meadows or irrigated pasture land will NOT exceed a 75% utilization rate, in order for Utah prairie dogs to gain sufficient weight to increase over-winter survival rates.
- Grazing in non-irrigated range or pasture land will NOT exceed a 50% utilization rate, in order for Utah prairie dogs to gain sufficient weight to increase over-winter survival rates.

Irrigation Management

Excessive irrigation or uneven water flows can flood prairie dog burrows. Thus, conservation measures that must be followed when irrigating on a conservation easement are:

- Flood irrigation is NOT allowed on the portion of the easement with active Utah prairie dog burrows. Flood irrigation flows can be evened by installing gated pipelines.
- Land smoothing may be necessary to achieve more-even distribution of irrigation water, but smoothing is NOT allowed on the portion of the easement where the Utah prairie dog have active burrows.
- Sprinklers generally provide more even water distribution than flood irrigation. Therefore, sprinkler irrigation is allowed and encouraged.

Brush Management

Reducing shrub or other woody species height, density, and structure can help improve prairie dogs' visual surveillance for predators and improve the quality and quantity of their forage by helping to re-establish understory forage plants. Brush management can be applied to an existing colony to reduce shrub encroachment, adjacent to a colony to encourage its expansion, or to sites where future re-introduction of Utah prairie dogs is planned.

A variety of treatment measures and equipment can be used to eliminate or reduce shrub density. Non-sprouting shrubs, including most sagebrush species, can be eliminated by plowing, mowing, raiing, or chaining. These practices uproot or shear off the plants, resulting in a nearly 100% kill rate. Railing, chaining, pipe harrowing, roller chopping, or other practices that shear off or crush the shrubs can be conducted at any season; however, mechanical treatment during the fall season when shrub seeds are ripe can result in unintended planting of shrub seed.

Mowing is the most effective way to kill or remove most shrubs and does not result in debris piles that can serve to conceal predators. Mowing also kills plants of all ages, including those of small stature. Chaining, pipe-harrowing, and roller chopping normally kill 40 to 60% of all plants. Repeated passes or treatments are effective in removing nearly all plants. Pipe harrowing creates and leaves behind rather large piles of dead shrubs that persist for many years. Chaining and roller chopping usually leave plants scattered on the site as they once existed. Once-over treatment can kill most shrubs if completed in the winter when shrubs are most brittle. Chaining or plowing creates the most favorable seedbed.

Conservation measures that must be followed when applying brush management techniques on a conservation easement are:

- Removing brush must include techniques designed to eliminate the shrubs without leaving piles of debris or disturbing the soil to a depth of greater than 18 inches.

- Brush removal should be effective in removing all age classes of shrubs. Removal of young or small plants is important, as these can and will be released and grow rapidly to again provide a dense woody cover.
- Control measures should also be designed to prevent shrub recruitment within the new seedlings. Most sites that have supported mature stands of shrubs have accumulated a shrub seed bank.
- Mechanical or chemical treatments that remove a high percent of the leaves can be used to control sagebrush. Sagebrush seedlings are not highly competitive and normally succumb to competition from herbaceous plants.

Prescribed Fire

Prescribed fire can increase forage quality by removing dead material and increasing the ability of Utah prairie dogs to see predators by removing existing vegetation. However, fire will not prevent recovery of root sprouting species. Most perennial grasses and forbs will recover after burning. Non-sprouting shrubs, including all sagebrush species, are killed by most fires. Fires usually leave a barren, open surface that may or may not be conducive to seeding. Removing litter and plant debris is not always advisable. Barren seedbeds dry quickly and establishing new seedlings on these soils can be difficult. Fires usually do not fully control weeds, and in some instances (i.e., cheatgrass) fires actually encourage weeds. Therefore, follow-up measures such as herbicides may be needed to completely control weeds.

Conservation measures that must be followed when applying prescribed fire on a conservation easement are:

- Prescribed burns will only be conducted on the portion of the easement that does NOT contain occupied Utah Prairie Dog burrows.
- Burning must be carried out during specific seasons when vegetation will carry a burn.
- Prescribed burns should be conducted from November 1- April 1 (when conditions allow).
- Care must be taken so that fires do not spread to adjacent areas.

Vegetation Barriers

Planting vegetation barriers, such as windbreaks, shelterbelts, or rows of tall grasses and shrubs, can potentially limit the expansion of Utah prairie dog colonies into undesirable areas, thereby minimizing the need for future control of prairie dogs.

Conservation measures that must be followed when installing vegetation barriers on a conservation easement are:

- A vegetation barrier should be at least 18 inches tall and should be at least 20 feet in thickness. The best barriers will be comprised of tall grasses and at least two

layers of shrubs. Trees may not suffice unless their branches reach ground level (e.g. juniper) or unless planted with tall grasses and shrubs.

- To reach sufficient height and density, vegetation barriers should be excluded from livestock grazing.
- Before barriers are installed, the landowner will check with the USFWS to ensure that the barrier will not harm Utah prairie dogs and is consistent with the ESA.

Exclusion

Excluding animals, people, or vehicles to protect, maintain, or improve the quantity and quality of Utah prairie dog habitat may be a beneficial practice. Exclusion may be temporary while habitat is being established, or permanent. Barriers constructed for exclusion must be adequate to prevent intrusion of the target animals, vehicles, or people. The barriers are usually fences, but may also be natural and artificial structures such as logs, boulders, earth fill, gates, and signs.

Plague Management

The UDWR, landowner, or another cooperating agency may dust burrows to control fleas and prevent the spread of plague using pesticides or other techniques as approved by the Utah prairie dog Recovery Team.

As part of the dusting, reports will be completed that include dates dusted, amount and type of pesticide used, number of burrows treated, the acreage of each colony treated, and a map of each colony treated. When possible, post-application monitoring of the colony should occur within the same season to determine effectiveness of application. Dead Utah prairie dogs found during post-application monitoring can be submitted for analysis of plague.

PROJECT EXAMPLES

Example 1: Rangeland (brush management, seeding, grazing)

A private landowner manages a 1,000-acre ranch. His goals are to improve his forage for livestock and restore a degraded pasture that has been repeatedly disked and seeded. The pasture contains some native species, but due to heavy, repeated grazing, much bare ground exists. Over the years, rabbit brush has extensively invaded this pasture. It contains a small Utah prairie dog colony, but expansion is limited by the tall, dense brush.

Pasture improvements can increase forage quality and quantify for both livestock and prairie dogs and also increase visual surveillance by Utah prairie dogs. Improvements could include employing herbicide and mowing the rabbit brush, inter-seeding with a wide variety of native grasses and forbs that offer productive forage for livestock as well as palatable Utah prairie dog forage, and implementing a rotational grazing system that includes rest for the treated pasture during brush treatments and inter-seeding followed by grazing to a height that is appropriate for Utah prairie dogs (468 inches).

Example 2: Irrigated degraded pasture with animals present (brush management, irrigation control, seeding, grazing management)

A private landowner owns an irrigated pasture with dense rabbit brush and an inefficient irrigation system. A small, active Utah prairie dog colony exists on the property, but the slowly increasing rabbit brush growth threatens the colony's existence by limiting visual surveillance and competing with herbaceous forage. Uneven water flows are flooding some Utah prairie dog burrows.

The landowner could implement the several practices to increase forage for both livestock and Utah prairie dogs, reduce the chances of burrow flooding, and maintain better future forage production. Possible practices include: brush management (herbicide and/or mechanical treatments); seeding appropriate pasture grasses and forbs; installing a gated pipeline to control the flow of irrigation water; installing fencing to rotate cattle, resting pasture from grazing pressure until vegetation treatments are successful, and reducing livestock impact. Stocking rates may need to be adjusted to manage the vegetation at heights suitable for Utah prairie dogs.

Example 3: Cropland restoration to irrigated pasture (switch to grazing system, irrigation, grazing management, seeding).

A landowner owns a 1,000-acre farm that is used for livestock and crop production. About 800 acres are in irrigated pasture (hand lines) and about 200 acres are planted to alfalfa and oats. The landowner is interested in reducing his labor and production costs and has decided to switch his operation entirely to livestock grazing and he will purchase his winter feed. He has two active Utah prairie dog colonies: one in an irrigated pasture and the other near a corral in a winter feeding area.

The switch to a full grazing operation could significantly benefit the existing Utah prairie dog colonies by increasing available habitat for the species and reducing the chance that Utah prairie dog burrows will be damaged by mechanical harvesting. The landowner could implement the following practices: restoring crop fields and bare ground to irrigated pastures planted to a diverse mixture of grasses and forbs; improving irrigation systems to reduce chances of burrow flooding, decrease labor, and use water more efficiently; and implementing a grazing system that rotates livestock, provides rest for the pasture, and manages the vegetation at heights suitable for Utah prairie dog colony expansion.

PROJECT EVALUATION

All conservation easements and habitat projects must include monitoring and evaluation as part of any Utah prairie dog habitat improvement project to determine the project's success toward meeting its objectives. Evaluation is necessary to help the USFWS determine changes in prairie dog habitat and population numbers and determine a project's contribution toward overall recovery of the species.

Consult with the UDWR and USFWS to establish a monitoring program. The tools and techniques for monitoring will vary depending upon the management prescriptions chosen for the conservation easement. Some metrics that may be included in the monitoring program include, but are not limited to, counting the number of Utah prairie dogs on the easement,

measuring the amount of habitat that Utah prairie dogs are occupying, and changes in habitat quality and quantity.

APPENDIX 1. CONSERVED HABITAT VALUE FORM

Directions: To be filled out annually with a biologist from a cooperating agency.

CONSERVED HABITAT VALUE		CREDIT	
Factor	Criteria	Value	Priority
HABITAT QUALITY			
Species Richness	Species Richness = 10, 3 grass, 3 forb	0	L
	Species Richness >10, 3 grass, 3 forb	1	M
	Species Richness >20, 6 grass, 6 forb	2	H
Average Shrub Canopy Cover	average shrub canopy cover >20%	0	L
	average shrub canopy cover 11-20%	1	M
	average shrub canopy cover 0-10%	2	H
% Ground cover	% Ground cover 0-20	0	L
	% Ground cover 20-60	1	M
	% Ground cover 60-100	2	H
Moisture rich vegetation	None	0	L
	300-1000m	1	M
	<300m	2	H
LANDSCAPE CONTEXT			
Landscape Location	>2 km dispersal distances to other colony	0	L
	1 -2 km dispersal distances to other colony	1.5	M
	0-1 km dispersal distance to other colony	4	H
Barriers to dispersal	4 sides barred to dispersal (w/in 2 km)	0	L
	3 sides barred to dispersal (w/in 2 km)	1.5	M
	0-2 sides barred to dispersal (w/in 2 km)	4	H
POPULATION			
Persistence	unknown or < 6 of 10 years	0	L
	occupied 6-10 years	1	M
	occupied consistently for 10 years (or more)	2	H
Number of Prairie Dogs	21-30	0	L
	31-60	1	M
	>60	2	H
Total Value			
Maximum Value = 20			
Total Value / 20			
Low Value = <0.5			
Medium Value = 0.5 - 0.8			
High Value = >0.8			

APPENDIX 2. NRCS CONSERVATION PRACTICE CODE DESCRIPTIONS

NRCS conservation practice codes and their descriptions are listed below. NRCS developed standards for each of the conservation practices that contain information on why and where each practice is applied. The standard also sets minimum quality criteria that must be met while applying each of these conservation practices in order for the conservation practice to achieve its intended purpose. These standards can be found on-line at <http://www.nrcs.usda.gov/technical/standards/nhcp.html>.

Code	Conservation Practice Name	Description
314	Brush Management	Restoring natural plant community balance, maintain or enhance wildlife habitat including that associated with threatened or endangered species.
315	Herbaceous Weed Control	Removing herbaceous weeds including invasive, noxious, and prohibited plants.
327	Conservation Cover	Establishing and maintaining permanent vegetative cover to protect soil and water resources and enhance wildlife habitat.
328	Conservation Crop Rotation	Growing crops in planned sequences on the same field.
338	Prescribed Burning	Applying controlled fire to a predetermined area. One of purposes is to restore and maintain ecological sites.
340	Cover Crop	Planting crops including grasses, legumes and forbs for seasonal cover and other conservation purposes.
342	Critical Area Planting	Establishing permanent vegetation on sites with high erosion rates or potential, or sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation with normal practices.
378	Pond	May be used as part of a managed grazing system.
380	Windbreak/Shelterbelt Establishment	Planting one or more rows of shrubs and/or trees. This practice can be used to create vegetative barriers to Utah prairie dog expansion while serving multiple purposes.
382	Fence	May be used as part of a managed grazing system.
386	Field Border	Establishing a strip of permanent or temporary vegetation at the edge or on the border of a field. This practice can be used to create vegetative barriers to Utah prairie dog expansion.
430	HH Irrigation Water Conveyance, Gated Pipe	Installing a rigid pipe with closely spaced gates as part of a surface irrigation system. Implementing this practice can result in more even water flows reducing burrow flooding.
442	Irrigation, Sprinkler	Installing an irrigation system with all necessary equipment and facilities for efficiently applying water by means of nozzles operated under pressure. Additional supporting irrigation practices (i.e., pipelines) may also be applicable.
449	Irrigation Water	Determining and controlling the volume, frequency and

Code	Conservation Practice Name	Description
	Management	application rate to irrigate in an efficient manner. This practice can be used to control Utah prairie dog burrow flooding.
466	Land Smoothing	Removing irregularities on the ground surface.
472	Access Control	Excluding animals, people, or vehicles from an area for the purpose of protecting natural resources.
512	Forage and Biomass Planting	Establishing herbaceous species suitable for pasture, hay, or biomass production.
516	Pipeline	May be used as part of a managed grazing system.
528	Prescribed Grazing	Controlling grazing and/or browsing to achieve a specified purpose or purposes. Standard mentions three purposes related to wildlife, provide or maintain food and/or cover for animals of concern, promote ecologically stable plant communities and improve the health and vigor of plants, and manage for the development of desired plant communities
548	Grazing Land Mechanical Treatment	Modifying physical soil and/or plant conditions with mechanical tools by treatments such as pitting, contour furrowing, chiseling, ripping or subsoiling.
550	Range Planting	Establishing adapted perennial vegetation. One purpose mentioned is to provide or improve forage, browse, or cover for wildlife. This practice only applies to lands where the principle method of vegetation management will be with herbivores.
574	Spring Development	May be used as part of a managed grazing system.
601	Vegetative Barrier	Establishing permanent strips of stiff, dense vegetation along the general contour to slopes or across concentrated flow areas. This practice applies to all eroding areas and can be used a part of a larger conservation management system to control erosion, water flow, stabilize steep slopes, or trap sediment.
612	Tree/Shrub Establishment	Establishing woody plants by planting seedlings or cuttings, direct seeding, or natural regeneration. Similar to CP 380, this practice can be used to create vegetative barriers to Utah prairie dog expansion.
614	Watering Facility	Providing animal access to water. This practice may be a part of a grazing system for wildlife habitat improvement.
642	Well	May be used as part of a managed grazing system.
643	Restoration and Management of Declining Habitats	Restoring and conserving rare or declining native vegetation communities and associated wildlife. This practice applies to any landscape which once supported or currently supports the habitat to be restored or managed.
645	Upland Wildlife Habitat Management	Creating, restoring, maintaining or enhancing areas of food, cover, and water for upland wildlife and species which use upland habitat for a portion of their life cycle. This practice applies to all landscapes suitable for the kinds of wildlife habitat that are needed within the range of the desired species or the natural community under consideration.