

Utah Division of Wildlife Resources
Utah Prairie Dog Management Plan for Non-federal Lands



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Glossary

Agriculture Areas - any land zoned for agricultural use that is used for the production of a cultivated crop or irrigated pasture that is currently used or has been used in the previous five years for producing a crop that can be harvested

COR - Certificate of Registration issued by Utah Division of Wildlife Resources to allow take of Utah prairie dogs

Developable Areas - any area zoned as commercial, industrial, or residential that does not have structures or improvements on the surface of the property, excluding utilities

Human health, safety and welfare concern areas - 1) public use areas, such as parks, golf courses, sports fields, playgrounds, airports, schools, churches, cemeteries, archaeological and historical sites, areas of cultural or religious significance, and improved roads; and 2) residential and commercial areas within 50 feet of an occupied establishment and beyond 50 feet on developed portions of ground around the occupied establishment, such as lawns, landscaping, gardens, driveways, etc.

Mapped - any and all areas within the species' range that were identified and documented since 1972 as currently or historically occupied by Utah prairie dogs, excluding mapped areas with a spring count of zero (0) animals for the previous 5 years. Official maps of Utah prairie dog habitat are maintained by the UDWR and are updated annually.

Occupancy - whether or not a mapped area is currently used by Utah prairie dogs as determined by a spring count of at least one (1) animal

Protected Land- non-federal property that is set aside for the preservation of Utah prairie dogs and protected specifically or primarily for that purpose. Protective mechanisms can include conservation easements, fee title purchases, regulatory designations, etc.

Range Areas - any area zoned for agricultural use that is used for grazing livestock and is not cultivated or irrigated

Spring Count - the total number of observed adult Utah prairie dogs (before juveniles emerge from the burrows in the spring) for a particular area following established counting guidelines

Introduction

The goal of the Utah Prairie Dog Management plan is: *To remove restrictions from private property through a timely and structured process while assisting in the conservation of populations on designated federal and protected non-federal lands.*

The Utah prairie dog management plan will direct Utah prairie dog management statewide on non-federal lands while the species is listed as threatened under the Endangered Species Act (ESA) and on all lands once the animal has been federally delisted. It is anticipated that the species could be delisted in as few as 5-10 years. This plan will be reviewed and assessed annually and will be updated as needed.

Background

Life History

The Utah prairie dog (*Cynomys parvidens*) is one of three species of white-tailed prairie dogs in the United States and is the western-most member of the genus *Cynomys*. This burrowing member of the squirrel family occurs in arid grasslands in southwestern Utah. While the Utah prairie dog prefers arid grasslands, it can also be found in desert rangelands, sagebrush steppes and edges of Ponderosa pine stands, as well as agricultural fields and urban areas.

The Utah prairie dog (UPD) is a social animal, living in small family groups called coteries, typically consisting of one adult male, one to three adult females, and their associated sub adults and juveniles. Their diet consists largely of grasses, forbs, some shrubs and even insects. The Utah prairie dogs main defense from predators is their complex burrow system. Burrows typically have at least two entrances and can be 5-10 meters long and 2-3 meters deep.

Approximately 66% of the spring adult population is female (Wright-Smith 1978). The skewed sex ratio is thought to be due to a high mortality rate for juvenile males resulting from conflicts with adult males and greater dispersal. Utah prairie dogs can enter hibernation/aestivation as early as late summer lasting until early spring. Females typically only come into estrous for 1 day a year, and gestation lasts for 35 days. Females generally give birth in April/May to litters averaging 4.1 young (Wright-Smith 1978, Mackley et al. 1988). Following the emergence of the juveniles in the spring, the summertime population may be quadruple the adult spring population.

Distribution and Abundance

It is estimated that as many as 95,000 individuals, occupying at least 700 sections (as delineated by cadastral mapping), may have populated southwestern Utah in the 1920's (Collier 1975). Intensive control campaigns, disease (sylvatic plague), and loss of habitat likely contributed to extensive population declines by the 1960s (U.S. Fish and Wildlife Service 1991a). By 1972, researchers estimated that only 3,300 Utah prairie dogs remained in 37 separate colonies and that the species would be extinct by the year 2000 (Collier and Spillett 1972, and 1973, U.S. Fish and Wildlife Service 1991a).

Following federal ESA protections arising in the early 1970's and implementation of recovery actions, there was a gradual increase in prairie dog numbers on private lands over the next decade. Responding to the improved status of the species and large increases of prairie dog numbers on private lands, the U.S. Fish and Wildlife Service (USFWS) down-listed the species from endangered to threatened 1984.

It is estimated that Utah prairie dogs currently occupy less than 10% of their historic range (Fig.1) The majority of prairie dogs (71% in 2014) are found on private lands; a situation that often results in complaints from landowners suffering damage caused by prairie dogs. In 1972, the Utah Division of Wildlife Resources (UDWR) initiated a translocation program to move Utah prairie dogs from private lands to areas of historical occupancy on public lands. Reestablishment of prairie dog populations on public lands, where greater protection is afforded, was considered crucial to the continued viability, eventual recovery, and local tolerance of the species. As of 2014, it is estimated that approximately 6,700 Utah prairie dogs are occupying habitat on federal and protected non-federal lands, and approximately 16,000 Utah prairie dogs are occupying habitat on non-protected lands.

Legal Status

The Utah prairie dog was listed as an endangered species on June 4, 1973 (38 FR 14678). On May 29, 1984 (49 FR 22330) Utah prairie dogs were reclassified as threatened with a special 4 (d) rule to allow regulated take of up to 5,000 animals in the seasonal window of June 1 through December 31. This rule was amended on June 14, 1991 (56 FR 27438) to increase the amount of regulated take allowed throughout the species' range to 6,000 animals.

On November 5, 2014 U.S. District Court Judge, Dee Benson, issued a decision in *People for the Ethical Treatment of Property Owners v. U.S. Fish and Wildlife Service*, case No. 2:13-cv-00278-DB, vacating the special 4(d) rule which granted the U.S. Fish and Wildlife Service authority under the Endangered Species Act to regulate the take of Utah prairie dogs on non-federal lands. Due to the ruling State law alone now regulates the take of Utah prairie dogs on private, state and local government lands (non-federal lands). Utah prairie dogs on protected private and federal lands are still protected under the ESA.

Management Actions

In 1972, the UDWR began mapping Utah prairie dog habitat throughout the species range and established a translocation program to move Utah prairie dogs from private lands to areas of historical occupancy on public lands. The translocation efforts continued annually each summer from 1972 through 1992. Translocations were halted to review effectiveness and develop studies to improve success. Efforts resumed again in 1996 and will continue for the foreseeable future. Thirty-thousand seven-hundred ninety-six (30,796) UPDs have been relocated as of 2014 (3,650 UPDs were relocated in 2013 and 2014 alone). UDWR initiated annual counts of Utah prairie dogs in 1976 and has been monitoring spring populations at all known colonies ever since.

The 4 (d) rule was implemented in 1984 to allow regulated take of up to 5,000 Utah prairie dogs annually in cases where they were causing damage to irrigated agriculture or pasture lands during the seasonal window of June 1 through December 31. This 4(d) control program was implemented by the UDWR permitting process under authority of UDWR Rule R657-19 Taking Nongame Mammals. This rule was amended in 1991 to increase the amount of regulated take to 6,000 Utah prairie dogs annually. As of 2013, 1,404 permits have been issued with a maximum allowed take of 64,149 animals. A total of 30,753 animals have been reported taken throughout the duration of the program, representing a 48 % success rate. (Kavalunas and Day 2014)

The first Utah prairie dog Habitat Conservation Plan (HCP) was developed in 1996 to allow incidental take of Utah prairie dogs for development activities under Section 10 (A)(1)(B) of the ESA. Prior to Judge Dee Benson's ruling there were five active HCPs : *Habitat Conservation Plan for Utah Prairie Dogs in Iron County, Utah (1998)*, *Habitat Conservation Plan By Connel Gower Construction, Inc.*, *Habitat Conservation Plan for the Cedar City Golf Course and the Paiute Tribal Lands*, *Final Low-Effect Habitat Conservation Plan for the Utah Prairie Dog in Residential and Commercial Development Areas of Iron County, Utah*, *Final Low-Effect Habitat Conservation Plan for the Utah Prairie Dog in Residential and Commercial Development Areas of Garfield County, Utah*. In addition to the current HCP's, the Federal Aviation Administration implemented the *Programmatic Sensitive Species Habitat Management Plan* in 2010 to allow airports to manage safety and maintenance and prepare for future developments.

In recent years the management of Utah prairie dogs on public and protected lands has been coordinated through the Utah Prairie Dog Recovery Implementation Program (UPDRIP). Partners participating in UPDRIP include representatives from Utah Department of Natural Resources, U.S. Forest Service (USFS), Bureau of Land Management (BLM), Natural Resources Conservation Service, National Park Service, UDWR, USFWS, State Institutional Trust Lands Association (SITLA), Iron County, Garfield County, Wayne County, Piute County, Utah Farm Bureau, Panoramaland Resource Conservation and development council, Color Country Resource and Conservation Development Council, local municipalities and environmental interest groups. This program was developed to help coordinate and increase the effectiveness of recovery efforts by providing a means for including local governments, citizens and citizen groups in the recovery process, creating a public-private partnership. UPDRIP has aided in the installation of translocation sites on County, BLM and USFS land, dusting efforts on public and protected lands, and obtaining funding for recovery efforts.

Since 1991 management actions for the Utah prairie dog have been guided by the *Utah Prairie Dog Recovery Plan*. Due to limited recovery success, the Utah Prairie Dog Recovery Team finalized and implemented the *Utah Prairie Dog Final Revised Recovery Plan* in 2012 with the following criteria:

1. At least 5,000 ac (2,023 ha) of occupied habitat are protected in perpetuity in each RU (West Desert, Paunsaugunt, and Awapa Plateau). These occupied habitat criteria will be spatially distributed to provide sufficient connectivity and gene flow within each RU.
2. At least 2,000 adult animals (at least 1,000 counted adults in the spring counts) are present in each RU (West Desert, Paunsaugunt, and Awapa Plateau) within protected habitat for 5 consecutive years.

3. Management strategies are in place to prevent and respond to threats from disease.
4. Education, outreach, and public relations programs and State and/or local regulations are in place and are sufficient to minimize illegal take, manage legal lethal control post-delisting, and foster habitat management practices.
5. Utah prairie dog-specific adaptive management strategies are in place on protected lands to improve suitable habitat in a manner that also will facilitate management responses to changing climatic conditions and other threat factors that are difficult to predict.

Assessment

Population Size/Distribution

Adult Utah prairie dogs are counted annually from April-June. Surveys begin first at lower elevation sites in the West Desert Recovery Unit and progress upward in elevation to the Paunsaugunt Recovery Unit and finally to the Awapa Plateau Recovery Unit (Fig. 2). Counts involve carefully approaching all known colonies by vehicle and/or on foot, scanning the colony with binoculars or a spotting scope, and recording the highest number of adult prairie dogs observed. Each colony is scanned a minimum of three times, but can be scanned several more times until the count reaches a plateau. Colonies are mapped by hand on 1:24,000 USGS topographical maps or through use of GPS equipment. Count data are recorded by colony location. Land ownership is determined for each colony and counts on contiguous colonies that included multiple ownerships are split accordingly. Counts are conducted on clear, calm days and are discontinued on cloudy or excessively windy days.

Prairie dog counts were conducted for 1,162 colonies across their range in 2014, and the count (n=11,427, total summer population estimate =82,274) was the highest on record. This represented a 207% increase over the 2003 count (lowest previous count in last 15 years) and was 145% higher than the mean count from 1976-2013 (n = 4,671). Counts across all three Recovery units have shown substantial increases in recent years across all land designations. (Fig.3) Recent increases in populations range-wide can be attributed to a number of factors including but not limited to: increased translocation of animals from private to public lands, increased coordination between state and federal agencies, mild winters leading to higher than normal survival, and increased efforts in plague abatement.

Habitat

As outlined above, the first criteria in the Revised Recovery Plan is at least 5,000 ac (2,023 ha) of occupied habitat that are protected in perpetuity in each RU (West Desert, Paunsaugunt, and Awapa Plateau). These occupied habitat criteria will be spatially distributed to provide sufficient connectivity and gene flow within each RU. Utah prairie dogs prefer swale-type formations where moist herbaceous vegetation is available even during drought periods (Collier 1975). Grasses and forbs are preferred food items during all seasons, and prairie dogs appear to select particular forage species rather than choosing foods based on availability (Crocker-Bedford and Spillett 1981). Vegetation quality and quantity are important in helping Utah prairie dogs survive hibernation, lactation, and other high nutrient demand

times. Plant species richness is correlated with increased weight gain, higher juvenile to adult ratios, and higher animal densities (Crocker-Bedford and Spillett 1981; Ritchie and Cheng 2001). Utah prairie dogs will avoid areas where brushy species dominate, and will eventually decline or disappear in areas invaded by brush (Collier 1975; Player and Urness 1982). Open habitats are important for foraging, visual surveillance for predators, and intraspecific interactions (Player and Urness 1982). Well-drained, deep soils (at least 3.3 ft (1 m) deep) are needed for burrowing. Burrows provide the prairie dog with protection from predators and insulation from environmental extremes. Soil color may aid in disguising prairie dogs from surface predators and thus may be an added survival factor (Turner 1979; Collier 1975) [Revised Recovery Plan, 2012].

Because the UDWR is not a land-management agency, constant coordination with federal partners is key in providing enough suitable habitat for recovery of the species. Much work has already been invested in coordinating recovery actions through the Utah Prairie Dog Recovery Implementation Team (UPDRIT). Completed in 2014, the *Utah Prairie Dog 5-year Management Unit Plans Path to Recovery (2014-2018)* will serve as the guiding document for achieving recovery of the species on federal and protected non-federal lands. Outlined in this plan are detailed management plans for 18 specific management units spatially distributed across the range of the species. While UPDRIT delineated 40 management units, it was felt that with intensive management the species could be recovered in as few as 18 of these units. Included in each management unit plan are specifics for habitat modification and the UDWR will continue to partner with federal agencies to accomplish these tasks.

Use

Unlike other prairie dog species across the west, there is currently no hunting season, or unregulated take of Utah prairie dogs. Incidental take is permitted through CORs (following previously established HCPs). Intentional take is permitted through CORs for agricultural damage following the UDWR's current rule allowing take of up to 6,000 animals annually. After reaching recovery and eventual delisting from ESA regulations, it is expected Utah prairie dogs will continue to have full protections on federal and protected non-federal lands. At this time, the UDWR does not foresee implementing any strategies that would allow for commercial hunting of the species post-delisting.

Relationship with other wildlife

Utah prairie dogs have long been viewed as a keystone species, one that has a disproportionately large effect on its environment relative to its abundance. Their burrow systems routinely provide nesting cavities for Burrowing owls, a species of special concern in Utah as well as rabbits, ground squirrels and weasels. Prairie dogs decrease vegetation height and increase heterogeneity. Their burrowing and excavation mixes soils and increases nitrogen uptake by local plant communities. (Hoogland, 2001). Kotliar et al. (1999) examined the impacts of prairie dogs on their environment against strongly held assumptions of its keystone standing and summarized that while some functional impacts may be less than originally assumed, collectively prairie dog functions in grassland ecosystems have a much larger impact than most herbivores in the same system.

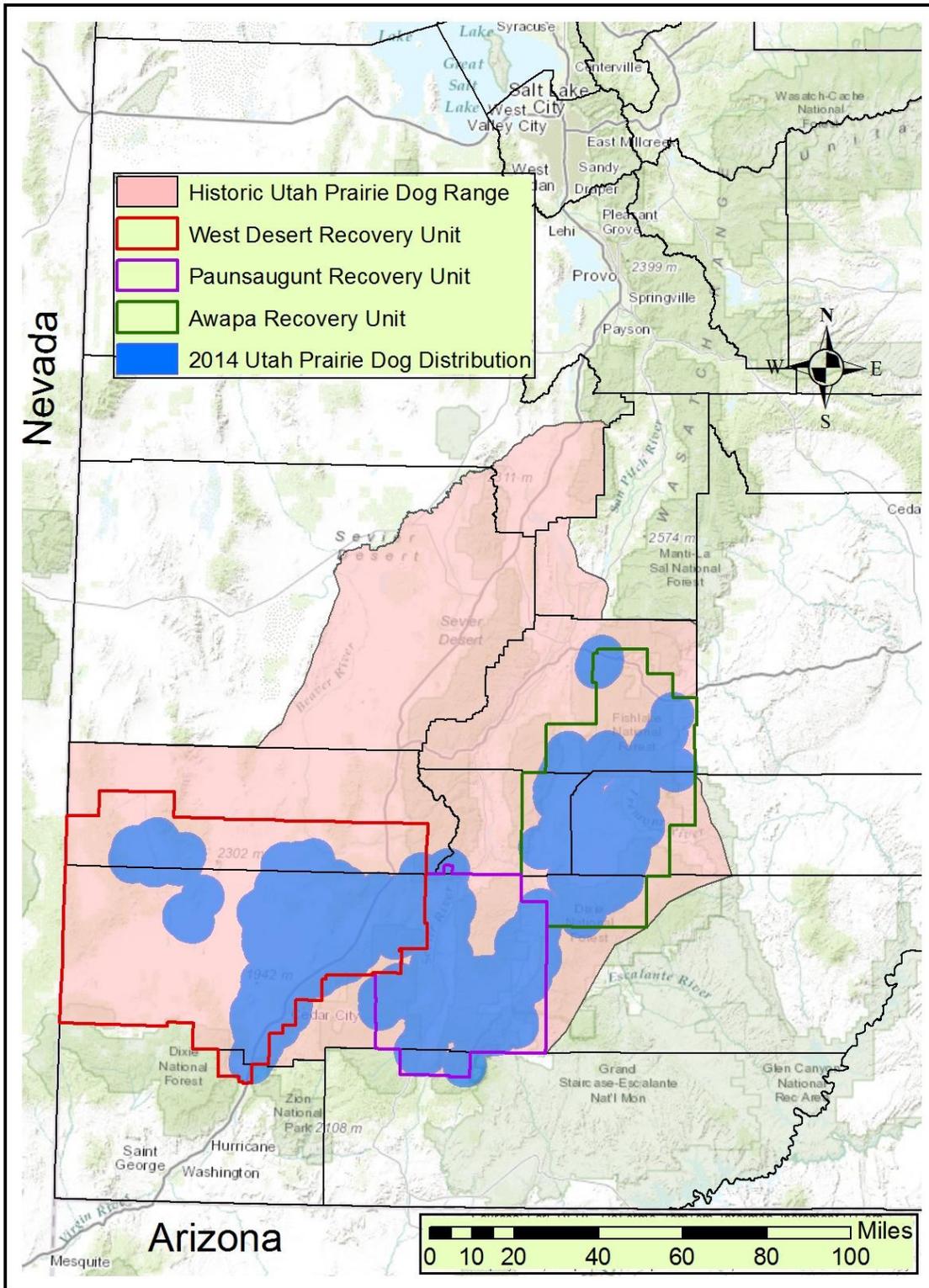


Fig.2 - Approximate boundaries of the three Utah prairie dog recovery units as described in the Utah Prairie Dog Recovery Plan.

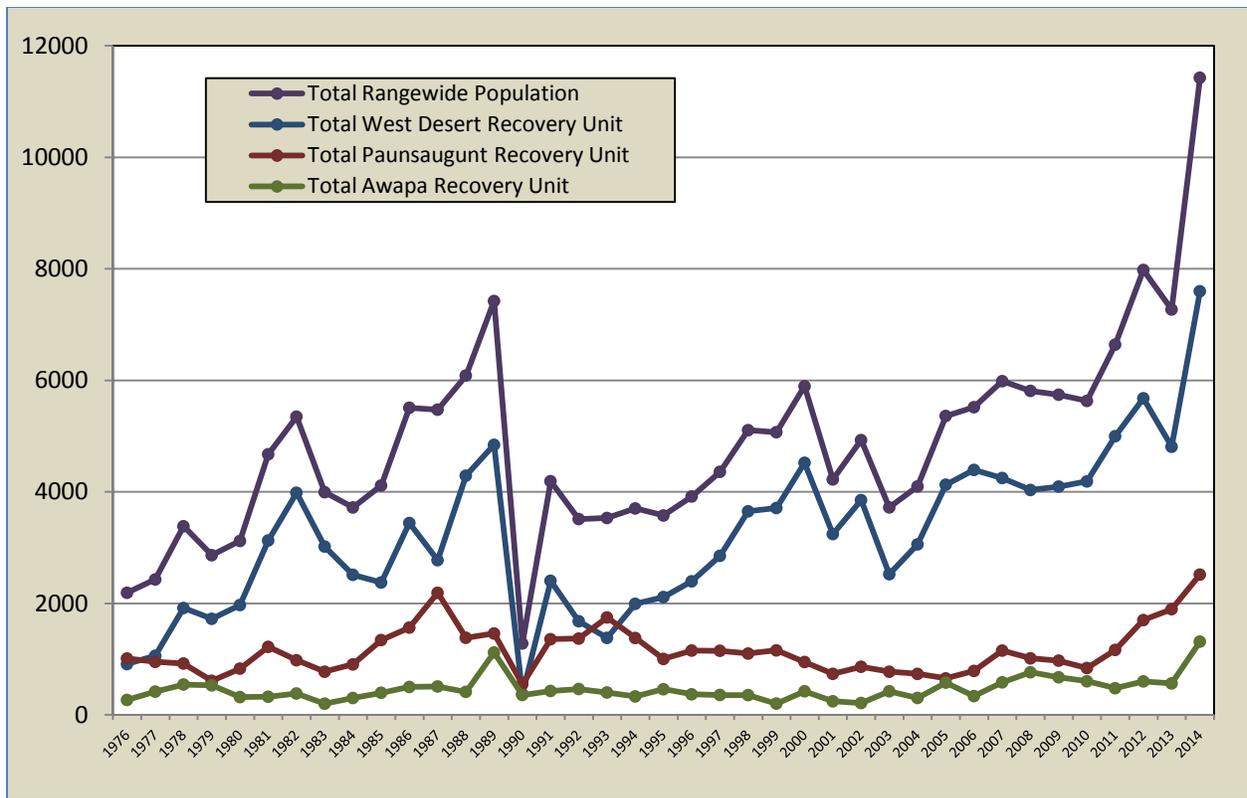


Fig.3 – Utah Prairie Dog Spring Adult Count 1976-2014.

Management Objectives and Strategies

Goal: To remove restrictions from private property through a timely and structured process while assisting in the conservation of populations on designated “federal” and protected non-federal lands.

Private Property/Non-Federal:

Overarching Objectives:

- a. Develop a cooperative education/information mechanism to explain new process.
 - i. Counties/UDWR develop an online education/permitting process.
 - ii. UDWR will coordinate a series of outreach campaigns beginning spring 2015.
 1. Explain value of UPDs on protected lands.
 - a. Signs at colonies (informational).
 2. Explain benefits of State management on non-federal lands (including SITLA).
 3. Address changes under new management.
 4. Explain the plan to the public in understandable terms.
 5. Give regular updates on how the plan is progressing.
 6. Supply accurate information about disease.
 7. Explain when, how and where people can receive authorization to remove UPDs.
 8. Develop a fact sheet.
 9. Develop a check list for dealing with UPDs on private land, including contact information.
- b. Remove restrictions on all unoccupied (mapped and unmapped) private lands.
 - i. Any private property not mapped as UPD habitat according to the 2014 Spring Count survey is considered exempt from all permitting restrictions relating to UPDs. Should UPDs be found on the property, they may be taken using any legal means authorized under state/federal or local laws.
 - ii. After UDWR assesses occupancy for all known mapped colonies during 2015 Spring Counts, all colonies with a spring count of zero (0) for 5 consecutive years will be classified as unoccupied. If spring count of zero (0) is unverified, the property owner must allow access to the colony to verify occupancy. Any private property with mapped habitat that is verified as unoccupied according to the 2015 Spring Count survey is considered exempt from all restrictions relating to UPDs. Should UPDs be found on the property, they may be taken using any legal means authorized under state/federal or local laws.
 - iii. UDWR will be responsible for documenting and updating mapped/occupied properties on an annual basis and coordinating with local governments.

The following objectives address regulated take of Utah prairie dogs for the purposes of safety/health/welfare, development, and agricultural/rangelands conflicts. Total take for development and agricultural/rangeland purposes is set at 6,000 UPDs annually range wide¹. If the current year's spring count on private properties range wide exceeds 6,000 UPDs, then ½ the amount of UPDs exceeding 6,000 will be added to the annual take allotment [EXAMPLE: If private land spring counts range wide total 6,800 animals, then 400 UPDs (½ of 800) will be added to the 6,000 annual take allotment]². Once the three year average spring count of protected populations in a Recovery Unit reach a spring count of 2,000 UPDs, there will be no take limitations on non-federal lands in that Recovery Unit. UPDs taken for the purposes of health, safety and welfare concerns will not be deducted from the annual take allotment.

Objectives:

1. Health, Safety and Welfare Concern Areas
 - a. Remove conflicts on non-federal lands where Utah prairie dogs impact human health, safety and welfare.
 - i. In circumstances where UPDs create human health, safety and welfare hazards, all UPDs can be removed (any legal method) without a permit. The UDWR must be notified prior to taking action, and the number of UPDs taken must be reported to the UDWR in accordance with current regulation.
 - b. Target trapping in areas where Utah prairie dogs have the potential to create human health, safety and welfare concerns.
 - i. UDWR's trapping and relocation efforts will be focused on removing UPDs within approved developments and from areas where they impact human health and safety.
2. Developable Areas (e.g. Commercial/Industrial and Residential)
 - a. Prior to ground disturbance on any property within mapped habitat the UDWR must be contacted to perform an occupancy survey (Determined by local government permitting process).
 - i. In order to estimate take the current UDWR occupancy survey protocol will be applied (Appendix 1).
 1. If no UPDs are found during the survey, then the project will be issued an approval letter.
 2. If UPDs are found:
 - a. After take assessment has been performed, the project proponent will receive a COR and may begin construction.
 - b. Authorized take will be deducted from the yearly range wide take allotment (*minimum of 6,000 UPDs*) unless project

¹ Annual take allotment is based on the previous 4(d) rule allowing lethal take of up to 6,000 UPDs annually range wide (adopted into UDWR administrative rule R-657-19-7) for agricultural damage (56 FR 27438).

² Annual spring counts are typically completed by mid June. Any additional take above 6,000 animals will be calculated and added to the yearly take allotment by August 1 each year.

timeframe allows for trapping and relocation of UPDs during the approved trapping season.

- ii. All approvals are indefinite.
- b. Undeveloped lots with UPDs emigrating onto developed properties can be trapped by UDWR during translocation season upon request. Properties will be trapped according to a priority list developed in coordination with local government.
- 3. Agriculture (Cultivated and/or Irrigated Pasture) and Range(Non-Irrigate Pasture) Areas
 - a. Simplify procedures to alleviate impacts from UPDs on agricultural and range properties.
 - i. A COR may be issued for lethal removal of UPDs on agricultural and range lands. No minimum number of prairie dogs is required to pursue a COR.
 - ii. Authorized take will be deducted from the yearly range wide take allotment (minimum 6,000 UPDs). Trapping can occur if UDWR time/personnel permits and UPDs trapped will not be deducted from the yearly range wide take allotment or the individual COR take limit.
 - iii. Lethal take allotments for COR's will be calculated according to the table below.

Sliding scale for take of UPDs on agricultural and range lands	
Count of UPDs*	Take Allotment per COR
0-999	50% of productivity**
1000-1249	100 % of productivity
1250-1499	100 % of productivity + 33% of spring count
1500-1999	100 % of productivity + 66% of spring count
2000+	no limit

*- Count of UPDs is based on a 3 year rolling average spring count on protected lands in each recovery unit.

**- Calculation of productivity= Spring count x 2(sightability) x .67(% of females) x .97(% of females that breed) x 4(average litter size) =Count x7.2

*Example: Spring Count on a particular private agricultural or range land=75
 Three (3) year average spring count on protected lands in the recovery unit = 1421
 Equation to calculate take:
 $75 * 2 * 0.67 * 0.97 * 4 = 390$ (calculated productivity)
 $390 + (0.33 * 75) = 415$ (total take)*

- a. Voluntary incentive system and protections for agricultural properties to retain/maintain UPDs.
 - i. Agricultural (cultivated and/or irrigated pasture) land owners or lessees with >50 UPDs (current year spring count) may be eligible to receive compensation (on first come first serve basis, as funds permit) for crop losses and damage caused by UPDs.
 - 1. Participant must agree to not control UPDs allowing UDWR to trap UPDs from July- September after which the land owner can pursue a COR for a portion of the remaining population for the remainder of the season.

2. Compensation is based on daily forage requirements of adult and juvenile UPDs feeding primarily on alfalfa. For every one (1) adult UPD counted, seasonal damage is estimated at \$45.90³, taking into account length of season and annual productivity of juvenile UPDs. An additional 10% of the estimated compensation will be added for damages to equipment/fencing etc. (ex: 137 UPDs counted in spring; $\$45.90 \times 137 = \$6,288 + 10\% = \$6,917$).
3. In coordination with UDWR, a COR may be obtained for lethal control of emigrating UPDs to limit dispersal and establishment of new colonies.

Federal Lands:

Overarching Objective: Retain State management authority on non-federal lands and continue to apply conservation measures on Federal lands.

Objectives:

- a. Conserve populations on federal and protected non-federal lands.
 - i. Continue to partner with the Recovery Implementation Team (RIT) and county/local governments to advance recovery of the species.
 - ii. Expect continued cooperation from the Federal Agencies.
 - iii. Enhance and continue support of UPDs on federal land.
 - iv. Continue to partner with federal agencies to perform spring counts and monitor populations post-delisting.
 - v. Establish state funding of UPD management and conservation.
 - vi. Partner with local/federal governments to acquire and improve protected habitat for UPDs.
 - vii. Should the need arise, pursue interim translocation preserves as a holding facility.
 - viii. Monitor translocation sites and coordinate with wildlife services for predator management.
 - ix. Disease abatement
 1. Manage plague on all non-federal conservation properties through the use of deltamethrin, or an approved vaccine.
 2. Support and coordinate plague abatement with federal agencies on federal lands.
 3. Continue to support research for a viable vaccine for UPDs.

³ Explanation of compensation calculation: 10 adult UPDs counted = 20 UPDs estimated with sightability. Estimated productivity for 10 counted adult UPDs = 52 juveniles. Adult consumption is estimated at 0.75 lbs of alfalfa/day, and juvenile consumption is estimated at 0.375 lbs of alfalfa/day (Biggins, pers comm). Adult UPDs may cause damage up to 5 months per season and juveniles up to 4 months per season. Estimated total seasonal consumption based on a count of 10 adult UPDs would be 4,590 lbs (2.295 tons) of alfalfa. Based on a value of \$200/ton of alfalfa, damage compensation = \$459, equating to \$45.90 per one(1) adult UPD.

- b. Increase populations on federal and protected non-federal lands.
 - i. Identify and establish sites for the translocation of Utah prairie dogs. Details of this process are described in detail in Appendix 2.
 - ii. Continue to translocate UPDs from private lands to protected/federal lands.
 - 1. Initial focus on safety concern areas.
 - 2. Removal of UPDs from future development areas.
 - 3. Translocation of UPDs from agricultural lands.
 - iii. Continue to support general objectives in the *Utah prairie Dog Recovery Plan*, *Population Structure for Utah Prairie Dog Recovery*, and the *5-year Management Unit Plan Path to Recovery* that are consistent with this management plan.
 - iv. Optimize opportunities for conservation efforts on protected lands by working with land management agencies to increase availability of relocation sites.
 - v. Develop multi-year translocation plan in consultation with the local governments and the RIT.
 - 1. Set annual goals for minimum translocation.
 - 2. Modification of Translocation Guidelines.

Literature Cited

- Biggins, D. 2015. USGS, Ft. Collins, CO, email recvd. Jan 20, 2015.
- Collier, G.D., and J.J. Spillett. 1972. Status of the Utah prairie dog. *Utah Acad. Sci., Arts, Lett.* 49:27-39.
- Collier, G.D., and J.J. Spillett. 1973. The Utah prairie dog--decline of a legend. *Utah Science* 34:83-87.
- Collier, G.D., and J.J. Spillett. 1975. Factors influencing the distribution of the Utah prairie dog, *Cynomys parvidens* (*Sciuridae*). *The Southwestern Naturalist* 20:151-158.
- Crocker-Bedford, D.C., and J.J. Spillett. 1981. Habitat relationships of the Utah prairie dog. Publication No. 1981-0-677-202/4. U.S. Department of Agriculture, Forest Service, Intermountain Region, Ogden, UT. 29 pp.
- Hoogland, J.L. 2001. Black-tailed, Gunnison's, and Utah prairie dogs all reproduce slowly. *Journal of Mammalogy* 82:917-927.
- Kavalunas, A., and K. Day 2014. Utah prairie dog recovery efforts progress report 2013. 44pp.
- Kotliar, N.B., B.W. Baker, and A.D. Whicker. 1999. A critical review of assumptions about the prairie dog as a keystone species. *Environmental Management* 24(2):177-192.
- Mackley, J.W. 1988. Dispersal and Life History of the Utah Prairie Dog (*Cynomys parvidens*) following habitat modifications and the effects of habitat modifications on Utah prairie dog (*Cynomys parvidens*) density, survival, and reproduction in an established colony. M.S. thesis. Brigham Young University, Provo, UT. 46 pp.
- Player, R.L., and P.J. Urness. 1982. Habitat Manipulation for Reestablishment of Utah Prairie Dogs in Capitol Reef National Park. *Great Basin Naturalist* 42:517-523.
- Ritchie, M.E., and E. Cheng. 2001. Effects of Grazing and Habitat Quality on Utah Prairie Dogs. 1998-1999 Final Report. Utah State University, Logan, UT.
- Turner, B. 1979. An evaluation of the Utah prairie dog (*Cynomys parvidens*) transplant success. Friends of the Zoo and Utah Division of Wildlife Resources. Publication No. 79-7. Utah Department of Natural Resources.
- U.S. Fish and Wildlife Service. 1973. *Federal Register*: 38, No. 14678. June 4, 1973.
- U.S. Fish and Wildlife Service. 1991. *Federal Register*: 56, No. 27438. June 14, 1991.
- U.S. Fish and Wildlife Service. 2012. Utah Prairie Dog (*Cynomys parvidens*) Final Revised Recovery Plan. U.S. Fish and Wildlife Service, Denver, CO. 169pp.
- U.S. Fish and Wildlife Service and Utah Division of Wildlife Resources. 1991. Utah prairie dog Recovery Plan. Denver, CO. 41 pp.

Wright-Smith, M.A. 1978. The ecology and social organization of *Cynomys parvidens* (Utah prairie dog) in south central Utah. M.A. Thesis, Indiana University, Bloomington.
44 pp.

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Participants

Beaver County
Bryce Canyon City/Ruby's Inn
Bureau of Land Management
Congressman Stewart's Office
Garfield County
Iron County
Kane County
Paiute Indian Tribe
Piute County
Representative Mike Noel
State Institutional Trust Lands Association
Senator Evan Vickers
United States Forest Service
Utah Association of Counties
Utah Attorney General's Office
Utah Department of Natural Resources
Utah Division of Wildlife Resources
Utah Farm Bureau
Utah Wildlife Board
Wayne County

Appendix 1 – Occupancy Survey Protocol

I. Introduction

A protocol for surveying for Utah prairie dogs has been developed for guidance to determine the presence or absence of prairie dogs in proposed development and construction project areas. Surveys for the presence of Utah prairie dogs are intended to: 1) help citizens comply with State of Utah regulations regarding the killing of this species, 2) allow for implementation of conservation actions that will speed recovery of the species, and 3) reduce human prairie dog conflict.

A. Federal Actions: If a proposed project has a Federal nexus a section 7 survey must be coordinated with the corresponding Federal agency.

B. Non-Federal Actions: For non-Federal actions, this survey protocol is intended to provide technical assistance to entities to determine presence or absence of Utah prairie dogs in a proposed project area

If the proposed project area falls within a mapped Utah prairie dog colony according to the *2014 Final Utah prairie dog Occupancy map*, a survey needs to be performed to determine occupancy and assess any take of Utah prairie dogs that may occur.

C. Revision of Survey Protocol: This recommended survey protocol is subject to revision as new information becomes available.

II. Survey Protocol

This survey protocol includes seven parts: 1) surveyor qualifications, 2) survey need, 3) survey methods, 4) survey maps and report forms, 5) clearance to translocate, 6) survey time period, and 7) survey results.

A. Surveyor Qualifications: As a general rule, a qualified Utah prairie dog surveyor is a biologist with a bachelor's degree or graduate degree in biology, ecology, wildlife biology, mammalogy, or related fields. He/she must have demonstrated prior field experience using accepted resource agency techniques to survey for Utah prairie dogs. In addition, the surveyor must be capable of recognizing and accurately identifying Utah prairie dogs and all types of Utah prairie dog sign. The surveyor must also have the ability to legibly and completely record all sign on the survey report form and topographic maps.

B. Survey Need: The need for Utah prairie dog surveys is usually determined when an owner/developer applies for a building permit or a conditional use permit. Building permit offices in Utah prairie dog range will maintain lists of parcels that do not require Utah prairie surveys dog and of parcels that may contain Utah prairie dog habitat and will require Utah prairie dog surveys. Building permit offices will determine, based on these lists, if the proposed project falls within a parcel that may require a Utah prairie dog survey. If a survey is required, the project proponent will be referred to the Utah Division of Wildlife Resources (UDWR). Alternately, any entity may request a Utah prairie dog survey of the UDWR directly at any time.

C. Survey Methods: A Presence or Absence Survey for Utah prairie dogs is required within any project area known or suspected to support Utah prairie dogs. This survey will determine if the project is likely to kill prairie dogs and, therefore, require approval through the approved State Utah Prairie Dog Management Plan or a valid Certificate of Registration. The results of a Presence or Absence Survey are only valid from the date conducted through the following 31 March. This ensures reliability of the data.

Surveys must be done on calm, clear days where there is less than 40% cloud cover and the wind speed does not exceed 3 on the Beaufort Scale.

The entire project area is surveyed initially with binoculars and/or a spotting scope. It must be surveyed from a distance, so as not to frighten the prairie dogs and have them remain underground. The surveyor must be close enough, however, to be able to see the entire area. He/she may need to survey from many different vantage points depending on the size of the area and obstructions. The distance from the area will vary from site to site. A minimum of three counts will be taken. The surveyor will continue the counts until the numbers plateau or decrease. All counts must be recorded on the survey report forms.

After counting, the surveyor must conduct a 100% coverage survey of the action area. The surveyor will walk through the entire area searching for burrows and other prairie dog sign on transects 10 meters wide. Care must be taken as to not overlap transects. The surveyor must take note if the burrows are occupied, unoccupied, or abandoned. Walking transects through the area will give the surveyor a better idea on the accuracy of their counts. For example, finding numerous, occupied burrows indicates Utah prairie dog habitation, even if the surveyor does not observe any prairie dogs.

Other Species

In addition to information on Utah prairie dogs, observations must be made and noted on any other threatened or endangered species (Federal or state), sensitive species, or species of concern that are found in the project area.

D. Survey Maps and Report Forms: Utah prairie dog survey results will be recorded on a count summary sheet and an accompanying map of the surveyed area. These records will be maintained by UDWR. The survey results will be reported to the project proponent or property owner/manager in the shortest time possible.

E. Trapping and Translocating: If Utah prairie dogs are present and the proposed action will result in take, Utah prairie dogs affected by the action may be trapped and translocated. Trapping will continue until UDWR determines no more prairie dogs are left on the parcel or all prairie dogs that can be trapped have been trapped. Utah prairie dogs removed during trapping will be translocated to approved release sites following approved translocation guidelines.

F. Survey Time Period: Presence or Absence Surveys are most effective when conducted between 1 April and 1 September - the period of time when prairie dogs are active above ground. Surveys

conducted outside of this period may not accurately reflect the number of prairie dogs in the area because prairie dogs are not always active or above ground at other times of the year.

If the ground is covered in snow and a survey cannot be performed or there is prairie dog sign on the parcel, but no animals were seen, the UDWR will refer to their database of mapped Utah prairie dog habitat and population counts to determine presence of prairie dogs. If the project falls within mapped habitat the spring count (highest in last 5 years) for the colony will be used to assess take. Utah prairie dog surveys are valid from the survey date through the following 31 March.

Trapping and translocation is preferred and encouraged for projects that will result in killing Utah prairie dogs. The translocation season begins 1 July and ends 1 October. UDWR will trap and remove Utah prairie dogs from project areas prior to construction activities during the translocation period. Otherwise, projects may proceed as described in the State's Utah Prairie Dog Management plan.

Appendix 2 – Identification of Translocation Sites

The *Utah Prairie Dog Recovery Plan* established three Recovery Units within the historic range of the species (Figure 2). The West Desert Recovery Unit includes most of Iron County, the Paunsaugunt Recovery Unit covers western Garfield County and the Awapa Recovery Unit includes portions of Garfield, Piute, and Sevier and Wayne counties. Recovery will be based, in part, on each of these three units supporting 2000 adult prairie dogs on public and protected lands. Translocating animals to specific sites in each Recovery Unit is the primary means for reaching these numbers.

Before Utah prairie dogs can be translocated, sites on federal and protected non-federal lands must be identified and approved. The site selection and approval process is implemented through the RIT. Proposed translocation sites must meet specific guidelines. If a proposed site does not meet such requirements, habitat treatments may be implemented. Animals may also be translocated into historically occupied, but currently vacant colonies.

Currently approved translocation sites exist in all three Recovery Units. These sites in the West Desert are Mud Springs Bench, Horse Valley, Tebbs Pond, Little Horse Valley, Wild Pea Hollow and the Cedar City Waste Water Treatment Plant. Approved translocation sites in the Paunsaugunt Recovery Unit are Johnson Bench, Tom Best, Johns Valley, and Berry Springs. Big Lake and East Bald Knoll are the approved sites in the Awapa Recovery Unit.

Additional translocation sites will be needed in the future. Selection of these sites will likely be associated with the management units described in the *Utah Prairie Dog 5-year Management Unit Plans Path to Recovery (2014-2018)* and listed below.

West Desert		Paunsaugunt		Awapa	
General Location	Management Unit	General Location	Management Unit	General Location	Management Unit
Pine Valley	Pine Valley	Long Valley	Bryce Woodlands	Awapa Plateau	Parker Hollow
Pine Valley	Sheep Creek	Long Valley	Mammoth Creek	Awapa Plateau	Awapa
Cedar Valley	Rush Lake	Panguitch Valley	Panguitch Creek	Awapa Plateau	The Tanks
Cedar Valley	Horse Hollow	Panguitch Valley	Hillsdale	Awapa Plateau	The Lakes
Black Mountains	Adams Well	Panguitch Valley	Rollermill	Grass Valley	Otter Creek
Black Mountains	M3	Berry Springs	Pat Willis	Grass Valley	Greenwich Creek
Black Mountains	Upper Long Hollow	Johnson Bench	Johnson Bench	Grass Valley	Box Creek
Black Mountains	Long Hollow	Berry Springs	Berry	Grass Valley	Grass Valley
Cedar Valley	The Gap	Berry Springs	Tom Best	Grass Valley	The Narrows
Parowan Valley	Dalley Farm	Panguitch Valley	Dog Valley		
Kanarraville/Quichapa	Quichapa	Panguitch Valley	Bullrush		
Kanarraville/Quichapa	Kanarraville	Panguitch Valley	Sanford		
Parowan Valley	U20/115	Panguitch Valley	Limekiln		
Buckskin Valley	Buckskin	Johnson Bench	East Creek		
		Johnson Bench	FAA Camp		
		Lower Johns Valley	Prospect		
		Lower Johns Valley	Cottonwood		