

**HABITAT CONSERVATION PLAN**

**for**

**UTAH PRAIRIE DOGS**

**in**

**IRON COUNTY, UTAH**

Submitted by:

**Iron County Commission**

**and**

**Utah Division of Wildlife Resources**

**June 26, 1998**

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## GLOSSARY

**Administrative Monitoring** - Monitoring that will be conducted by each local government that issues building permits. It will consist of tracking the number of building permit applicants that require clearance surveys, number of clearance surveys that have been completed, survey results, acreage that has been approved for development, acreage that was developed, number of Utah prairie dogs translocated, and number of Utah prairie dogs that could not be trapped and were considered taken.

**Biological Monitoring** - Vegetation monitoring at translocation sites, continuing annual spring counts, documenting new sites, and intensive monitoring of Utah prairie dogs at new sites.

**Clearance Area** - Those areas where surveys for Utah prairie dogs must be conducted prior to development. For purposes of this plan, and to quantify take, clearance areas have been defined as those areas where Utah prairie dogs or their sign have been mapped since 1976 (habitat), plus an additional area surrounding that which encompasses an estimate of home range, disturbance distance, and mapping error. Any new colonies that are discovered during annual monitoring will be added to the maps by UDWR and will fall under this definition.

**Colony** - Groups of animals with associated mounds, burrows, and food resources that are within calling distance. These units are genetically similar and vulnerable to local catastrophes including disease outbreaks.

**Complex** - Groups of associated colonies that are within two miles of each other, not separated by geographic barriers, and will exchange migrants every one to two generations.

**Disturbance** - Acts that interfere or interrupt habits and behavioral patterns of wildlife. These acts may or may not be intentional. Normal agricultural practices do not constitute disturbance, but would require a period of 30 days to pass after the disturbance before clearance surveys would be considered valid.

**Ground Disturbance** - Areas where the ground has been disturbed causing alteration or destruction of Utah prairie dog habitat. A building permit or special approval (e.g., plat approval, conditional use permit) does not necessarily need to be issued. Normal agricultural practices do not constitute ground disturbance, but would require a period of 30 days to pass after the ground disturbance before clearance surveys would be considered valid.

**Habitat (Utah prairie dog)** - Areas where Utah prairie dogs or their sign have been mapped since 1976 and new colonies found and mapped by UDWR.

**Harass** - An intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3).

**Harm** - An act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3).

**Minimize** - Actions undertaken to reduce the likelihood of permanent loss of habitat and/or death of Utah prairie dogs.

**Mitigate** - Actions undertaken to offset the permanent loss of Utah prairie dogs and/or Utah prairie dog habitat.

**Non-permanent Take** - Take resulting in a reduction of Utah prairie dogs within a colony, but no loss of habitat (e.g., habitat is not destroyed).

**Normal Agricultural Practices** - Agricultural practices on public and private lands including plowing, discing, seeding, mowing, irrigating, subsoiling, leveling, baling, etc. that are undertaken with the intent of producing an agricultural commodity, which do not disturb more than the top eighteen inches of ground surface and which do not permanently preclude occupation by Utah prairie dogs. Excessive engagement in any of these activities for the purpose of hazing or removing Utah prairie dogs is not considered a normal agricultural practice.

**Pasture** - Plot of private land, typically not cultivated, used for grazing domestic livestock during part or all of the year.

**Permanent Take** - Take resulting from activities that adversely affect any resident Utah prairie dogs and any future occupation of the area by Utah prairie dogs; contributes to a net loss of habitat. Activities that may result in permanent take include, but are not limited to, development activities such as residential or commercial construction, road construction, parking lot construction, excavation, etc.

**Qualified Biologist** - An individual that meets education and experience criteria for conducting Utah prairie dog clearance surveys, as described in the Utah prairie dog clearance survey protocol (Appendix I).

**Sign** - Evidence of Utah prairie dog occupation through spoor, scat, and/or burrows.

**Take** - To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct with respect to any species listed under the ESA (Section 3 (19)).

**Translocation Failure** - A translocation will be considered to have failed if the spring count of adult Utah prairie dogs three years after the last translocation is less than 15% of the average number of prairie dogs released at the site each year during the first three years of establishment. (Example: if 200 Utah prairie dogs are translocated to a new site in each of years one, two, and three, then the site must contain at least 30 adults by year six, or the translocation will be considered to have failed). A failed translocation does not necessarily mean the site is unsuitable for future translocations. Reasons for failure would be analyzed and, if consistent with recovery guidelines, the site could be modified to better accommodate Utah prairie dogs and become eligible for additional translocations.

# HABITAT CONSERVATION PLAN

for

## UTAH PRAIRIE DOGS

in

## IRON COUNTY, UTAH

### 1.0 INTRODUCTION

#### Purpose/Need

The Utah prairie dog is a federally threatened species that occurs only in southwestern Utah. A large proportion (65%) of the total population of Utah prairie dogs occurs in Iron County, and a high percentage (86%) of those (2,456/2,843 in 1997) occur on privately owned lands. Population growth in Iron County has averaged more than 6% over the last five years, and is expected to continue at least at the same pace, and possibly as high as 10% (Colgan 1997). The increase in both residential and commercial development in Iron County has been the greatest in Cedar City, but has also increased in and around other municipalities along the Interstate 15 corridor, including Kanarrville, Enoch, Summit, and Parowan. It is along this corridor where the majority of Utah prairie dogs in Iron County occur. Thus, conflicts between development of private lands and the federally protected Utah prairie dog have become increasingly common. To address these conflicts and provide a comprehensive solution to the problems, Iron County and the Utah Division of Wildlife Resources (UDWR) have developed this Habitat Conservation Plan (HCP) to obtain a Section 10(a)(1)(B) Incidental Take Permit from the U.S. Fish and Wildlife Service (USFWS). The HCP process allows take of a species, and/or its habitat, as long as the species is protected, its habitat is conserved, and the permitted take is incidental to otherwise lawful activities and will not jeopardize the ultimate survival of the species (USFWS 1996).

The goal of this plan is to allow continued development and economic growth in Iron County, while conserving and recovering the Utah prairie dog on public lands. The biological approach to this HCP is premised on coordinating with recovery program goals, which in turn are rooted in the best biological knowledge regarding Utah prairie dogs. Thus, it is the biology of the Utah prairie dog which largely dictates the necessary direction of this HCP. This coordination between the HCP, the Interim Conservation Strategy (Utah Prairie Dog Recovery Implementation Team (UPDRIT) 1997), and the Utah Prairie Dog Recovery Plan (USFWS 1991a) involves ensuring the permanent establishment of Utah prairie dogs on public lands through translocation and intense management. All activities outlined in this HCP are designed to follow and complement overall recovery efforts as are outlined in the Interim Conservation Strategy (UPDRIT 1997) and Utah Prairie Dog Recovery Plan (USFWS 1991a). This HCP follows guidelines prepared by the USFWS (1996), and attempts to address requirements of the HCP application and approval process.

*Acknowledgments* - Funding for development of this HCP was provided by Iron County, Utah Division of Wildlife Resources, and a grant through the National Fish and Wildlife Foundation. Data for the Iron County HCP was provided by Iron County, Utah Division of Wildlife Resources, Bureau of Land Management (BLM), and U.S. Fish and Wildlife Service. Many others who attended HCP meetings provided information and made suggestions that aided in completing this project. They include representatives from the U.S. House of Representatives and the U.S. Senate, the Utah Farm Bureau, City Council members, and private citizens.

## **2.0 HCP PLANNING PROCESS/INCIDENTAL TAKE PERMIT**

Under Section 10(a)(1)(B) of the Endangered Species Act (ESA), an incidental take permit must be obtained from the USFWS by non-federal parties before undertaking otherwise lawful activities that are likely to result in take of species listed under the ESA. This permit can be issued for an area where several projects will occur, to a single project, or for activities relating to the taking of a single specimen. Section 10(a)(2)(a) requires an applicant for an incidental take permit to submit with the permit application a habitat conservation plan that specifies the impacts likely to result from the proposed activities, and the measures that will be undertaken to minimize and mitigate such impacts, what alternatives were considered, and how the implementation of the program will be funded. These requirements always apply, regardless of the magnitude of the proposed take, the scale of the project, or the duration of the permit. The purpose of the habitat conservation plan process is to reduce conflicts between listed species and economic development activities, while providing a framework for partnerships between public and private sectors in the interests of conservation of endangered species and their habitat.

### **2.1 ESA Definition of "Take"**

As defined in the ESA, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct with respect to any species listed under the ESA (Section 3 (19)). In addition, "harm" and "harass" have been defined in federal regulations as:

"Harass" means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3).

"Harm" means an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3).

The federal laws that protect listed species have precedence over state and local statutes, and apply equally to the activities of state and federal agencies, private enterprise, and individuals. Violations

of the ESA are punishable by fines of up to \$100,000 and one year in jail, or both; and up to \$200,000 and a year in jail, or both for an organization or corporation (16 USC: 1540 and 18 USC: 3571 (a)(6)(c)(5)). Issuance of an incidental take permit does not preclude exemption to Section 9 enforcement provisions in cases where permit stipulations are violated.

## **2.2 Application and Approval Process**

An application for a Section 10(a) Incidental Take Permit must be submitted on an official form (Form 3-200) and be accompanied by the following attachments:

1. Description of the activity(-ies) for which the permit is being sought.
2. Common and scientific names of all species to be covered by the permit.
3. A Habitat Conservation Plan that specifies the following:
  - a. Impacts that will likely result from the proposed activities;
  - b. Steps followed to minimize, monitor, and mitigate impacts;
  - c. The level and source(s) of funding available to implement such steps;
  - d. Procedures that will be used to deal with unforeseen circumstances;
  - e. The name(s) of responsible party(-ies);
  - f. Alternatives explored that do not result in any taking, including no action, and the reasons these alternatives were abandoned;
  - g. Other measures required by USFWS as necessary or appropriate.

This application is submitted to the USFWS, who, after a public comment period, must issue the permit if all of the following conditions exist:

1. Any take occurs inadvertently during normal legal activities (i.e., "take" will be incidental);
2. The species has adequate protection;
3. The applicant(s) has minimized, mitigated, and provided for the monitoring of the proposed take to the maximum extent practicable.

## **2.3 HCP Impacts Guidelines**

HCP Guidelines from the USFWS (1996) identify four critical sub-tasks which must be completed to determine the type and extent of probable impacts to listed species. These sub-tasks include the following:

1. Delineation of plan boundaries, which should encompass all areas to be affected during the length of the permit by activities that may result in the incidental taking of a listed species.

2. Collection and synthesis of existing information on the distribution, occurrence, and ecology of federally listed and other species of concern within the plan boundaries.
3. Detailed description of the actions to be covered by the permit likely to result in incidental take, including those proposed and those reasonably certain to occur.
4. Determination of anticipated levels of incidental take, including how take will be calculated, the level of take expected from the proposed activities, and the level of take the Section 10 permit will actually authorize.

### 3.0 UTAH PRAIRIE DOG - BACKGROUND

#### 3.1 Taxonomy

A burrowing member of the squirrel family, the Utah prairie dog (*Cynomys parvidens*) inhabits arid grasslands and occurs only in southwestern Utah. It is one of three species of white-tailed prairie dogs in the United States and is the western-most member of the genus *Cynomys*. The other two species occurring in Utah are the white-tailed prairie dog (*Cynomys leucurus*) and Gunnison's prairie dog (*Cynomys gunnisoni zuniensis*) (Durrant 1952). All three are in the subgenus *Leucocrossuromys*, distinguished by a relatively short, white-tipped tail, as opposed to members of the subgenus *Cynomys*, which are distinguished by a black-tipped tail. *C. gunnisoni* is genetically, morphologically, behaviorally, and immunologically distinct from the other two white-tail species (Pizzimenti 1975). However, chromosomal and biochemical data suggest that *C. parvidens* and *C. leucurus* are closely related and may have once belonged to a single, interbreeding species (Pizzimenti 1975). The two are now separated by ecological and physiographic barriers and are considered separate species. Goodwin (1995) reports that there exists no fossil evidence of prairie dogs in the Great Basin, being absent from numerous fossil sites in the region. He regards the split between *C. leucurus* and *C. parvidens* as being a recent event, and adds that these two species appear to be derived from *C. niobrarius* and thus, *C. parvidens* probably did not derive directly from *C. leucurus*.

#### 3.2 Genetic Variability

Maintenance of genetic variability in threatened and endangered species is an important component of their eventual recovery. An electrophoretic study was conducted by Chesser (1984) to determine genetic variability of Utah prairie dogs and develop translocation management plans to avoid inbreeding. He reported that of 32 loci examined, only one was polymorphic, and that the species is virtually monomorphic at all loci. The near lack of genetic variability is thought to be the result of founder effect and subsequent genetic drift stemming from a small, isolated, initial progenitor population. This is because Utah prairie dogs are found in restricted, montane areas, and it is likely that "progenitors of the species became isolated from subsequent reciprocal genetic exchange with

ancestors" (Chesser 1984). Additionally, the social structure of prairie dog populations reduces the effective population size, increasing the possibility for genetic drift in small populations. The implications of the lack of genetic variation in Utah prairie dog populations are that prairie dogs in small, isolated colonies may suffer reduced fitness due to inbreeding depression. Chesser et al. (1980) recommends that avoidance of forced inbreeding should be a priority of the recovery program, and that new populations should contain animals from different areas in order to avoid inbreeding.

### 3.3 Habitat Use and Feeding Requirements

Prairie dogs require areas with well drained soils and must be able to inhabit a burrow system of at least 3.3 feet in depth without becoming wet. Utah prairie dog burrows are up to 10 feet in depth to provide adequate thermal insulation and protection from predators. Caliche layers may limit the distribution of prairie dog colonies in some locations (Coffeen and Pederson 1989, USFWS 1991a). Utah prairie dogs can burrow through some caliche layers, but it is unknown what thickness will limit prairie dogs.

Utah prairie dogs are primarily herbivorous, feeding mainly on grasses and forbs. Therefore, they are restricted to relatively open plant communities with short-stature vegetation. Preferred habitat, where alfalfa is not available, is short grass prairie (five inches) where vegetation height is low enough to allow standing prairie dogs to scan their environment for predators and sparse enough to enable them to see through it (Collier 1975). Prairie dogs will avoid areas where brushy species dominate, and will eventually decline or disappear in areas that are invaded by brush (Collier 1975, Player and Urness 1983). Crocker-Bedford (1976) noted a positive correlation between amount of moisture available in vegetation in their preferred habitat type (open plant communities with low vegetation) and prairie dog abundance and density. Because Utah prairie dogs obtain most of their water from the plants they eat, they prefer swale type formations where moist herbage is available even during periods of drought (Collier 1975, Crocker-Bedford and Spillett 1981). Utah prairie dogs occupy habitats in areas ranging from 5,100 to 9,900 feet above sea level. Prairie dog populations thrive in colonies associated with alfalfa. Individuals are heavier, gain mass quicker, and exist at much higher densities than those not associated with alfalfa (Crocker-Bedford and Spillett 1981). Most Utah prairie dogs currently inhabit either densely populated colonies associated with alfalfa or sparsely populated colonies on high plateaus (Crocker-Bedford and Spillett 1981).

Utah prairie dogs are opportunistic, feeding on a variety of foods. Crocker-Bedford and Spillett (1981) reported that cool season grasses were the only preferred food type during all seasons, comprising 61% of the prairie dog's diet. Perennial forbs comprised 16.8% of the diet, shrubs 14%, and warm season grasses 0.7%. The preference index (mean percentage of chewing time for a food type divided by the mean percentage of availability of that food type) for grasses was 10 times that of all forbs. Crested wheatgrass (*Agropyron cristatum*) comprised about 90% of the available grass at their study sites, and thus was the preferred grass. However, it is unknown whether crested wheatgrass is preferred or if it is consumed because it predominates at this and most other occupied sites. Perennial forbs were the second most consumed plant type, although they were not preferred based on availability. Shrubs were not selected for, and generally were avoided except in fall when they were in flower or seed.

Hasenyager (1984) determined Utah prairie dog diets at three study sites based on fecal analysis and concluded that prairie dogs did not randomly consume forage species in relation to their availability, but selected particular species. He reported that at a site in Cedar City, cool season grasses composed the staple of the dogs annual diet (77%), and of three periods tested, grasses were most preferred during spring and fall. Preference for forbs was particularly high during the summer and fall periods. Shrubs, as a group, were avoided. *Bromus* spp. comprised the majority of the prairie dogs' annual diet there. In the John's Valley study area, grasses comprised the greatest proportion of the diet and highest preference of the vegetational classes in the spring period. Both the percent composition in the diet and the preference for grasses shifted to forbs through the summer and into the fall, although only 3 of 15 available forb species were preferred. Consumption of grasses on the Awapa Plateau site decreased from spring to fall, with a dramatic decrease from the summer to fall sampling periods. The consumption of forbs increased only slightly over the same periods. Select shrubs were important during the fall, possibly due to a lack of other preferred forage types on the site.

Both studies (Crocker-Bedford and Spillett 1981, Hasenyager 1984) found that cool-season grasses dominate the diet, that Utah prairie dogs select specific species from each plant group, and that consumption of plant types varies throughout the growing season as their availability changes relative to other plant groups (such as forbs as they become available in the summer and fall and flowering parts of shrubs during fall). Crocker-Bedford and Spillett (1981) also report that prairie dogs, given the opportunity, selected flowers and seeds over young leaves, young leaves over older leaves, and older leaves over stems. They also found that insect cicadas were preferred over all other forage items when available.

Crocker-Bedford (1976) concluded that 72% of the variability in densities of prairie dogs at 19 different colonies could be attributed to elevation and availability of cool season palatable forage. Amounts of available cool season forage were highly correlated to dog town density, and apparently must occur in sufficient quantity in high altitude prairie dog colonies for them to succeed. Altitude was negatively correlated with prairie dog density. Cool season palatable forage is extremely important because it is available during a period when prairie dogs have the greatest nutritional needs. Prairie dogs emerge from hibernation in March and April and immediately need to restore energy reserves used during hibernation. Utah prairie dogs usually breed in March and lactate into June. During this period the energy requirements of females is almost two times greater than during summer. Crocker-Bedford (1976) reported that 52% to 68% of the annual total grazing by Utah prairie dogs occurs from March to mid-June. Warm season vegetation, which does not green up until late May or early June, cannot fulfill the nutritional requirements of prairie dogs at this time (Crocker-Bedford and Spillett 1981).

Based on the above studies, it has been recommended that translocation sites have an average total vegetation cover of 25-45% containing 20-40% cool season grasses, 5-10% warm season grasses, 5-15% forbs, 1-3% rabbitbrush, and 0% shrubs other than rabbitbrush (USFWS 1991a). This has been modified in the Interim Conservation Strategy to the following:

Vegetation Type	Percentage of Ground Cover	Additional Requirements
Warm-season Grasses	3% - 10%	If warm season grasses are less than 3%, then desirable forbs must be 11% - 20%.
Cool-season Grasses	12% - 40%	A minimum of three species are required, with at least one native species present.
Forbs	1% - 10%	Non-annual, and a minimum of 1% of forbs must be desirable species; if warm season grasses are less than 3%, then desirable forbs must be 11% - 20%.
Shrubs	0% - 3%	

### 3.4 Population Dynamics/Life History

Prairie dogs hibernate, ceasing surface activity during the harsh winter months. Adult males usually cease surface activity in September, followed by adult females several weeks later. Juvenile prairie dogs remain active as late as November. It is thought that adult females and juveniles go into hibernation later than males because they require additional time to build the necessary fat stores to maintain them through winter. Utah prairie dogs are not totally dormant in winter and have been observed above ground during all months of the year. Emergence from hibernation usually occurs in March, and is thought to be triggered by temperature. Mating occurs soon after emergence, and young are born in April following a 30-day gestation. Juveniles appear above ground at the age of 5 to 7 weeks, usually in mid-May. They attain adult size by October, and are sexually mature at one year of age. Litter size varies from 1 to 6 young, with a mean litter size of 4.1 (Pizzimenti and Collier 1975, Wright-Smith 1978, Mackley et al. 1988). Mackley et al. (1988) report that 3% of adult females do not bring a litter above ground each year. Sex ratio of juveniles at birth is 1:1, but the adult sex ratio is skewed towards females, with adult female:adult male sex ratios varying from 1.8:1 (Mackley et al. 1988) to 2:1 (Wright-Smith 1978). The skewed sex ratio is thought to be the result of higher juvenile male mortality resulting from conflicts with adult males and greater dispersal (USFWS 1991a). Juveniles comprise about 73% of all prairie dogs observed each summer (Mackley et al. 1988).

Information on age specific survival is scarce for Utah prairie dogs. Mackley et al. (1988) report survival of males was 24% the first year, 23.5% from age 1 to age 2, and 9% for males who were at least two years of age. Survival of juvenile females was 33% the first year, 31.5% from age 1 to age 2, and 22.5% for females at least two years of age. At least 5.3% of female prairie dogs reach three years of age. Maximum age of prairie dogs is thought to be four years. Major causes of mortality include depredation by coyotes (*Canis latrans*), badgers (*Taxidea taxus*), and raptors; plague; social conflicts; and overwinter mortality (USFWS 1991a). Overwinter mortality, dispersal, and forage quality were thought to be the major causes of the 73% average annual juvenile mortality in the study by Mackley et al. (1988). Collier and Spillett (1972) believe that predators probably do not exert a

controlling influence on numbers of prairie dogs in established colonies, but they can be significant in small or newly established colonies (Jacquart et al. 1986).

Utah prairie dogs are organized into social groups consisting of an adult male, several adult females, and their young (Wright-Smith 1978). The clans are loosely organized with no observable dominance hierarchy. Similar to *C. gunnisoni*, adult female Utah prairie dogs play the major role in caring for young and warning of danger (Wright-Smith 1978). Geographic boundaries of clans remain fairly constant within a colony, and young prairie dogs are the only ones to regularly cross boundaries. Utah prairie dogs will use common feeding grounds, but still maintain elements of territoriality in those areas (Wright-Smith 1978). Social behaviors, especially socially facilitated vigilance and subsequent warning vocalizations, are extremely important to survival of individuals in colonies and to the overall well-being of the colony. Jacquart et al. (1986) noted that in translocation colonies, vocalizations were nearly absent during the first year of release, and did not reappear until the following spring.

It was recognized that disruption of social units may affect success of translocated prairie dogs. Therefore, behavioral responses of translocated prairie dogs were specifically examined by Ackers (1992). He reported that translocated prairie dogs spent less time foraging and more time moving than control prairie dogs, and behaved more like solitary individuals rather than a colonial species. Translocated prairie dogs did not increase the amount of time they were alert (in an upright posture), as was predicted, presumably because of the lack of socially facilitated vigilance in the new colony and therefore the need to minimize conspicuousness.

The most important factor influencing the behavior of translocated prairie dogs was the availability of burrows. Ackers (1992) felt the constraints associated with exploratory behavior, lack of socially facilitated vigilance, and need for adequate burrows overrides the tendency to immediately form new social units. Like Jacquart et al. (1986), Ackers (1992) also reported that reformation of social units and territorial boundaries did not occur during the first year after translocation. Ackers (1992) concluded that "the importance of providing adequate refugia and predator control appears to outweigh any negative social effects of translocating groups of unrelated animals." He also concluded that prairie dogs released into an existing colony (supplemental release) appear to readily disperse due to agonistic interactions with established residents, and that supplemental translocations should be directed toward vacant burrows away from areas of concentrated activity.

Home range size of prairie dogs in Wright-Smith's (1978) study varied from 1.25 to 4.4 acres, and was inversely related to density, which can range from 0.4 to 25 dogs per acre (Collier 1975, Wright-Smith 1978, Mackley et al. 1988). Dispersal movements occur mainly among juveniles and can be several kilometers (Wright-Smith 1978, Mackley et al. 1988). Mackley et al. (1988) documented dispersal distances up to 0.7 miles, averaging 0.33 miles per migration event, and a 12% migration rate (i.e., 12% of marked prairie dogs moved at least 0.1 miles from its nearest neighbor). They noted that juveniles in their study followed a pattern similarly observed by Wright-Smith (1978) - that they tend to gradually disperse out of their own clan territory and eventually disappear. Ackers (1992) monitored translocated prairie dogs and reported that none of the 50 released animals were

located within 0.3 miles of the release site by the end of summer. Crocker-Bedford (1976) estimates that translocated prairie dogs would require five years to expand and migrate two miles from a translocation site.

### **3.5 Historic Distribution and Number**

Utah prairie dogs were thought to have once occupied an area that extended west across the Great Basin Desert almost to the Utah-Nevada state line (Allen 1905); north as far as the town of Nephi (Durrant 1952); southeast to what is now Bryce Canyon National Park; east to the foothills of the Aquarius Plateau; and south into the northern portions of Kane and Washington Counties. No voucher specimens are known for the Nephi area, and it is questionable whether Utah prairie dogs actually ranged that far north (Pizzimenti and Collier 1975). However, a colony has recently been discovered near the town of Gunnison, approximately 41 miles southeast of Nephi (McDonald 1997).

It is thought the introduction of domestic livestock into southwestern Utah initially improved habitat conditions, and thus the range of Utah prairie dogs. Areas of tall grasses, which are avoided by prairie dogs, were removed by livestock and replaced by short grass ecosystems favorable to prairie dogs (Crocker-Bedford and Spillett 1981). Utah prairie dogs were estimated to occupy about 700 sections in southwestern Utah and number more than 95,000 individuals in the 1920's (Turner 1979). By the 1960's, distribution of Utah prairie dogs was greatly reduced due to intensive control campaigns, disease (plague), and loss of habitat (See USFWS 1991a). Studies by Collier and Spillett (1972) indicated that Utah prairie dogs had declined or been eliminated from major portions of their historical range. By 1972, they estimated only 3,300 Utah prairie dogs remained in 37 separate colonies, and the species would be extinct by the year 2000 (Collier and Spillett 1973, USFWS 1991a). In 1971, it was estimated there were 2,070 prairie dogs occurring on 555 acres in Iron County, an average of 3.7 Utah prairie dogs per acre. This constituted about 35% of the total population, but just 25% of the total acreage. Of the 13 colonies known in the county, all but one were in a narrow stretch from Kanarraville to Paragonah (Collier and Spillett 1972).

### **3.6 Causes of Decline**

Intensive poisoning campaigns to eliminate prairie dogs in agricultural operations were responsible for eliminating prairie dogs from many areas they previously occupied (Collier and Spillett 1975). For example, 123,090 acres in Garfield, Iron, Piute, Sevier, and Wayne counties were treated with rodenticide in 1930 (USFWS 1991a). Prairie dog reductions apparently corresponded with periods of intensive poisoning in the 1920's-1930's, 1950, and 1960 (Collier and Spillett 1973). Prairie dogs recovered somewhat after each campaign, but some colonies were completely eliminated each time. Reductions in quantity and quality of habitat is thought to have increased the effectiveness of poisoning at reducing prairie dog distribution (Crocker-Bedford and Spillett 1981). Use of toxicants by federal agencies was discontinued in 1963, and was outlawed as a method of take with listing of the species under the Endangered Species Act in 1973. Illegal poisoning may still be a factor limiting recovery.

Plague is a bacterial organism usually spread through a flea vector, and is the single most disruptive disease organism affecting prairie dogs (Coffeen and Pederson 1989). It can also be spread by body fluids and excreta. Because plague is not native to North America, prairie dogs have not evolved with the disease and have very little resistance to it. It is suspected to have been the cause of population declines in several isolated colonies, but there is little evidence that plague was a major factor in overall decline of the species (Collier and Spillett 1972). Plague is suspected of causing declines in colonies in the John's Valley area in the early 1920's, late 1930's, mid-1950's (Collier and Spillett 1972), and early 1980's (1982 annual report); in Bryce Canyon National Park (Coffeen and Pederson 1989) and the Cedar-Parowan Valley in 1983 (USFWS 1991a); and at the Minersville #3 translocation site in 1991 (Fridell 1991). Plague outbreaks generally occur when populations increase to high densities causing increased stress among individuals and easier transmission of disease between individuals.

Climate, especially drought, is thought to be one of the most important factors influencing the distribution of the Utah prairie dog (Collier and Spillett 1975). Prairie dogs are dependent upon moist, succulent vegetation, and decline when that vegetation is not present (Crocker-Bedford and Spillett 1981). Colonies without moist vegetation are decimated by drought because prairie dogs are unable to obtain sufficient nutrients and water. Prairie dogs in colonies near moist areas with succulent vegetation occur at greater densities (Collier 1975). Prairie dog colonies are most often observed near swales and desert springs and are associated with moist vegetation (Collier 1975).

Habitat alteration due to a shift in vegetational succession from grass to predominantly woody shrubs also has caused a decline in Utah prairie dog distribution. Fire suppression and improper grazing by livestock have been implicated as a significant cause of this habitat alteration (Crocker-Bedford and Spillett 1981).

Long-term heavy grazing by livestock appears to have eliminated prairie dog habitat by creating a vegetational shift from predominantly grass habitat to poor quality shrub habitat, and may be responsible for much of the present scarcity of necessary early spring forage (Collier and Spillett 1973, Crocker-Bedford 1976). There has been a marked increase in shrubs at the expense of important, palatable, cool season grasses, which are now rare in many of the areas once occupied by Utah prairie dogs (Collier and Spillett 1973, Crocker-Bedford and Spillett 1981, Player and Urness 1983). Crocker-Bedford (1976) noted that spring grazing reduces the vigor of some cool season grasses, which are the preferred forage type of Utah prairie dogs. Because Utah prairie dogs must have moist, palatable forage to meet their nutritional and water requirements, the shift from grass to shrub habitat is detrimental. Shrub habitat also is detrimental because it impairs prairie dogs from seeing approaching predators.

### **3.7 Listing History**

Due to the dramatic decline in numbers and distribution, the Utah prairie dog was classified as endangered in 1968 by the U.S. Bureau of Sport Fisheries and Wildlife. It was removed from the list in 1970, and then replaced on June 4, 1973 under the ESA. The total number of prairie dogs and number of colonies subsequently increased to a point where they were causing damage on private

lands and were considered a nuisance. Because of the improved status of the species and large increases of prairie dogs on private lands, the USFWS reclassified the species from endangered to threatened on May 29, 1984 (USFWS 1984).

### **3.8 Current Status**

In 1997, the rangewide count of adult Utah prairie dogs was 4,357 individuals (Fig. 2, Table 1), below the ten-year average of 4,582. In the West Desert Recovery Area, the count was 2,850 adult Utah prairie dogs, of which only 393 were on public lands (Table 1). Those 393 Utah prairie dogs occurred in eleven different complexes containing a median of 15 adult Utah prairie dogs per complex (range 2-213). Because of the isolation and small number of individuals in public land colonies, there is a high probability of extinction of Utah prairie dogs in these public land colonies (McDonald 1993).

In 1995, the area of all mapped colonies was determined using a digital planimeter. Sixty-six percent of the habitat on which Utah prairie dogs have been mapped in the West Desert Recovery Area is privately owned, and 69% of the currently occupied habitat is privately owned (McDonald 1996), containing 86% of the known Utah prairie dogs in the West Desert Recovery Area. Utah prairie dogs currently occur on only 42% of the acres on which they have been mapped since 1976.

### **3.9 Control Program**

The large population explosion following emergence of young from their dens creates serious conflicts between Utah prairie dogs and human agricultural interests. The translocation program alleviated some of the nuisance complaints, but did not satisfy all landowners having prairie dog problems. Therefore, as part of the reclassification from endangered to threatened in 1984, the problem of nuisance prairie dogs was addressed by developing a special rule for the Utah prairie dog under Section 4(d) of the Endangered Species Act to allow "take" of prairie dogs on agricultural lands in Cedar and Parowan Valleys in Iron County (USFWS 1984). The number of prairie dogs that could be taken was limited to 5,000 animals annually and was confined to the period between 1 June and 31 December. The control program was considered a success because it increased cooperation between landowners and conservation agencies, provided landowners a means to alleviate localized problems, reduced incentive to illegally kill prairie dogs, and did not appear to negatively impact the population. The rule allowing take was amended by the USFWS in June 1991 to allow take to include all private land throughout the range of the Utah prairie dog, and increased the total annual allowable take from 5,000 to 6,000 animals (USFWS 1991b). The justification for allowing take was that juvenile Utah prairie dogs, the primary source of the nuisance complaints, experience a high natural mortality rate over the fall and winter, estimated to be 73%, and would perish anyway (USFWS 1991a).

A total of 10,677 Utah prairie dogs have been reported taken by permitted landowners since the control program was initiated in 1984. Of these, 7,298 were reported taken from colonies in the West Desert Recovery Area. Since the control program was expanded in 1991 to allow control throughout the range, 5,984 Utah prairie dogs have been reported taken, of which 45% were from the West Desert Recovery Area (Table 2).

### 3.10 Recovery Efforts

The UDWR initiated colony counts in 1976, and has been monitoring adult Utah prairie dogs at every known colony site each spring since 1976. Counts are conducted in the spring before young are above ground, so that only adult animals that survive the winter are counted. Work by Crocker-Bedford (1975) indicates that only 40 to 60% of the total prairie dog numbers are above ground at any one time. Approximately two thirds of the spring adult population is female (Wright-Smith 1978). Females generally give birth in April to litters averaging 4.1 young (Wright-Smith 1978, Mackley et al. 1988). Therefore, the summer population of Utah prairie dogs approximately triples once the young are born and emerge from their dens. However, juvenile Utah prairie dogs suffer an approximate 73% mortality rate (Mackley et al. 1988) during their first year, such that the adult population emerging from hibernation each year is approximately constant.

In 1972, UDWR initiated a translocation program to move Utah prairie dogs from private lands to areas of historical occupancy on public lands. It was felt that reestablishment of prairie dog populations on public lands, where greater protection is afforded, was crucial to the continued viability and eventual recovery of the species. Guidelines were developed for translocation methods and selection of translocation sites (Jacquart et al. 1986, Coffeen and Pederson 1993). These guidelines are continually modified as new information becomes available. Translocation efforts continued annually each summer from 1972 through 1992. The translocation program resumed again in 1996. From 1972 to 1992, over 16,740 Utah prairie dogs were live-trapped from private lands and translocated to public lands managed by the BLM, U.S. Forest Service (USFS), National Park Service (NPS), and State of Utah (McDonald 1993). However, overall success of the translocation program was very poor, and the program was suspended until an analysis of the entire program was completed. That analysis revealed that prairie dogs remained in only 17 of 38 areas in which they were translocated, and that prairie dogs in translocation colonies comprised only 29% of the population (McDonald 1993). In 1996, they comprised only 14% of the total population. In the West Desert Recovery Area, translocation complexes accounted for 70% of the active public land colonies there and 63% of the prairie dogs in public land colonies (McDonald 1993). Numbers of adult prairie dogs counted at translocation colonies established since 1986 averaged only 3.4% of the average number released in those colonies during the first three years Utah prairie dogs were translocated in those colonies. Based on recommendations resulting from the analysis, the BLM-administered Adams Well Translocation Site was established. In 1996, 430 Utah prairie dogs were translocated there (McDonald 1997) and 383 in 1997. Follow-up surveys in the spring of 1997 revealed that only approximately 26 (6%) prairie dogs survived over winter at the site. Seventeen translocated Utah prairie dogs were captured during September 1997 to assess overall condition and weight gain since originally being trapped. Weight gain of recaptured translocated Utah prairie dogs averaged 48.53 grams over 46 days (1.13 g/day), but ranged from -200 grams to +250 grams.

### 3.11 Utah Prairie Dog Recovery Plan

Recovery efforts for Utah prairie dogs have been underway since 1972. A draft recovery plan, written in 1979 by UDWR and the Ad Hoc Recovery Team, was formally approved, after several revisions, in 1991 (USFWS 1991a). The recovery objective stated in the Utah Prairie Dog Recovery

Plan (USFWS 1991a) is delisting by the year 2000. Criteria required to achieve delisting are: 1) establishing and maintaining one population each on public lands in the West Desert, Paunsaugunt, and Awapa Plateau Recovery Areas (Fig. 1); 2) maintaining each population with a minimum number of 813 adult animals in the annual spring census for five consecutive years; and 3) establishing and implementing a formal Memorandum of Understanding for long-term management of each population, including the transfer of animals between populations, for genetic purposes. It was felt that these steps would be necessary to establish and maintain the species as a self-sustaining, viable unit with retention of 90 percent of its genetic diversity for 200 years. Iron County is contained mostly within the West Desert Recovery Area and a small portion is located within the Paunsaugunt Recovery Area.

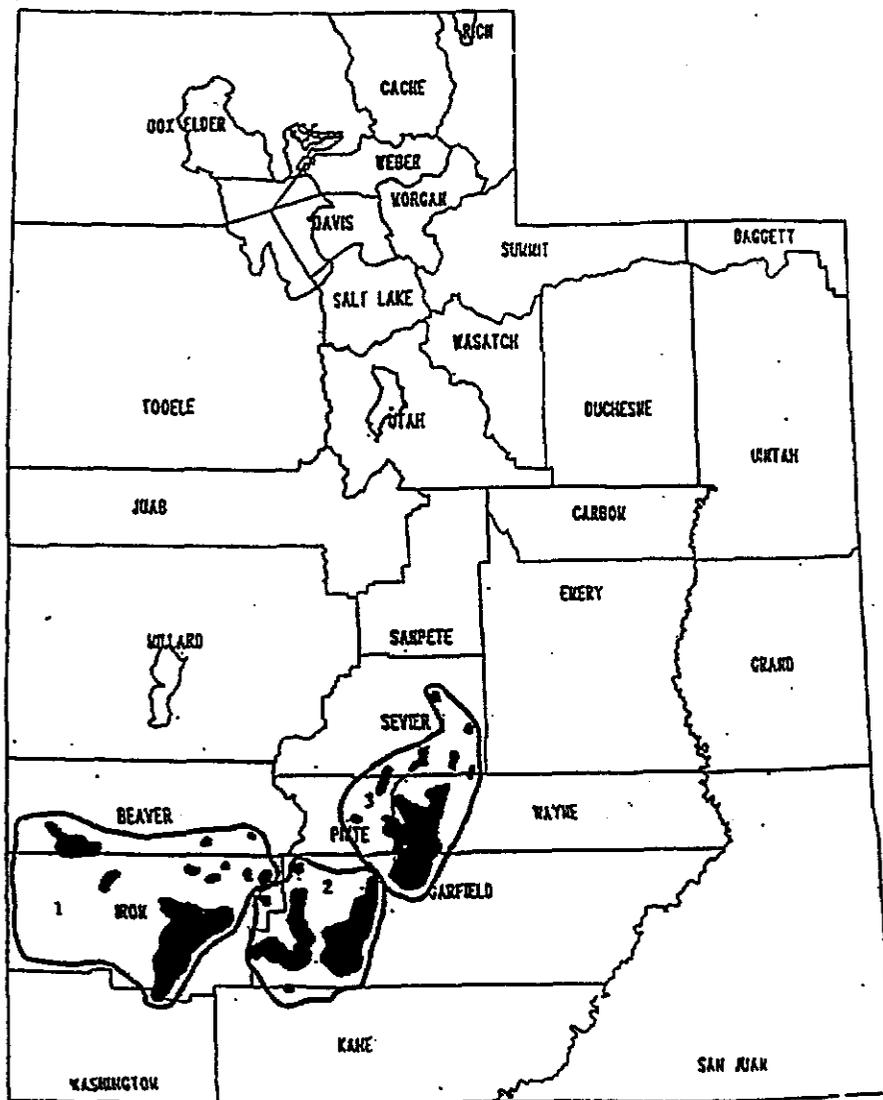
### **3.12 Interim Conservation Strategy**

Based on analysis of translocation success (McDonald 1993) and population data (Ritchie 1995), it has become apparent that recovery goals in the current Utah Prairie Dog Recovery Plan are too vague, making recovery essentially unachievable based on those goals. For example, the recovery plan calls for maintaining a minimum of 813 adult prairie dogs on public lands in each recovery area for five consecutive years. However, it is unclear whether this should be one complex of 813 animals, or if it can be 25 separate complexes of 30 animals. Also, the recovery plan does not take into consideration the proximity of colonies to other colonies, or frequent fluctuations in local population numbers. Preliminary results of an analysis of count data conducted to analyze population trends and ascertain whether population crashes could be predicted suggest that local populations of Utah prairie dogs exhibit non-linear density dependence and experience population fluctuations that are not related to colony size (Ritchie 1995). Colonies exhibit frequent extinctions that appear to be primarily deterministic, rather than stochastic. Therefore, it has been recommended that, based on these results, recovery goals may need to be revised to incorporate more fully metapopulation theory and its application to Utah prairie dog population dynamics and recovery (Ritchie 1995), and to take into consideration more current data on the biology and habitat needs of the Utah prairie dog, as well as the latest principles of conservation biology. Preliminary analysis of demographic and population data indicate that at least 15 complexes able to support at least 200 adult Utah prairie dogs each are necessary to ensure a 95% probability of persistence of 500 years in the West Desert Recovery Area. Based on a density of 0.73 adult Utah prairie dog per acre (McDonald 1996), at least 274 acres per complex are required to achieve this level. This density estimate is based on number of adult Utah prairie dogs counted on occupied acres in 1995 when acreage was last calculated. The calculation of occupied acres in 1995 does not include home range distance, disturbance distance, or mapping error referred to in Section 5.5.

Because data is still lacking on specific habitat requirements of Utah prairie dogs, an Interim Conservation Strategy has been proposed to direct recovery efforts for the next five to ten years. The Conservation Strategy proposes a three-phase strategy: 1) improving habitat at existing complexes, 2) conducting translocations and research at a minimum of eight new translocation sites associated with existing sites, four in the West Desert Recovery Area, and 3) developing a collaborative learning program and information and education campaign to help resolve conflicts and foster local cooperation in Utah prairie dog recovery. Habitat manipulation is being proposed to reduce woody

shrubs, provide productive grasslands, and provide additional habitat in areas on public lands where Utah prairie dogs already occur. Habitat manipulation also will occur on at least four new proposed translocation sites according to proposed research protocol. Proposed research will involve establishing different treatment plots at each translocation site to determine how habitat improvement and grazing practices might improve the persistence of translocated prairie dogs. This conservation strategy will be implemented beginning in 1998.

Figure 1. Map showing distribution of Utah prairie dogs and recovery areas.



1. West Desert 2. Paunsaugunt 3. Awapa Plateau

Figure 2. Counts of adult Utah prairie dogs on private and public lands, 1980-1997.

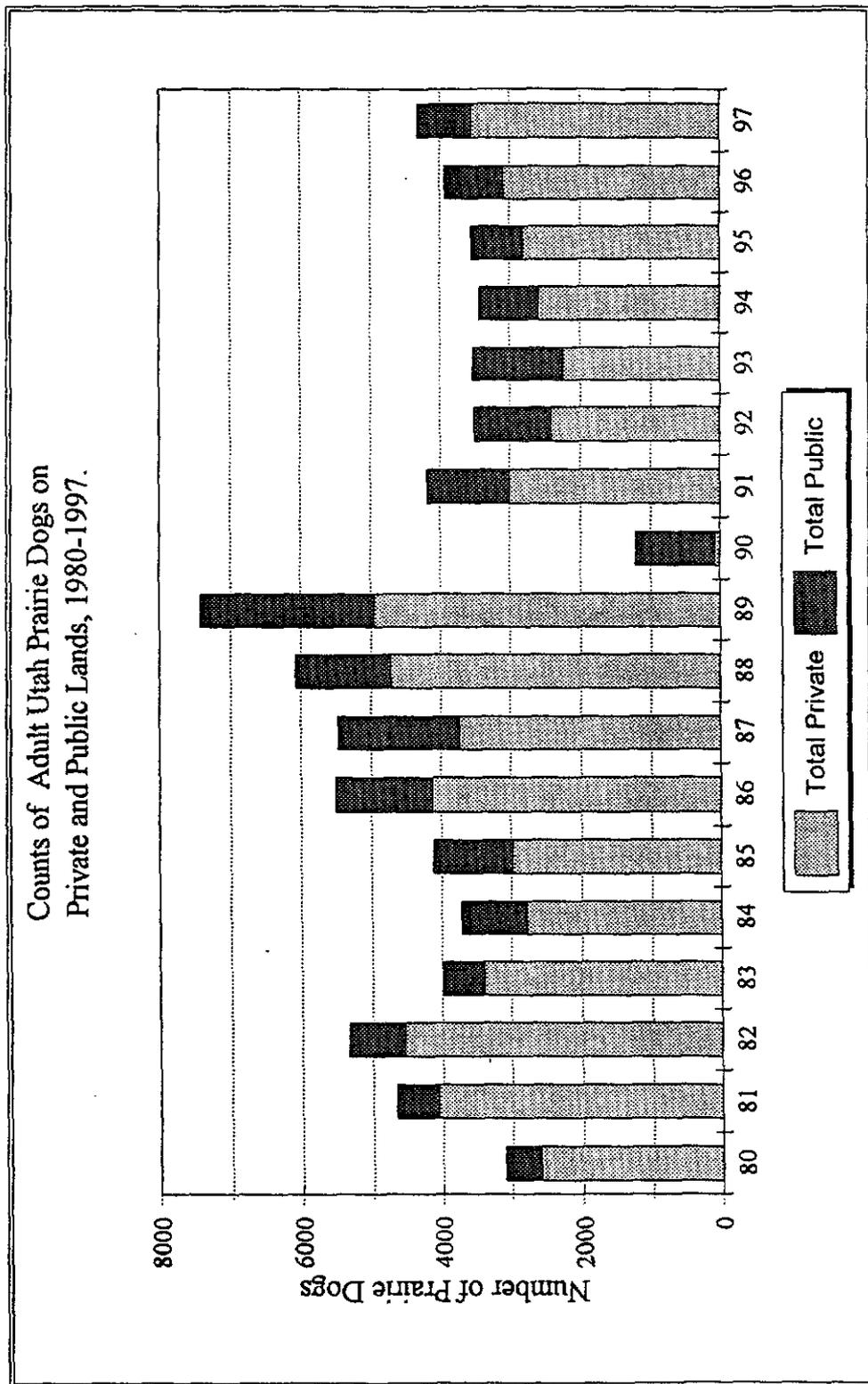


Table 1. Spring counts of Utah prairie dogs by recovery area and land ownership.

Recovery Area	86 Count	87 Count	88 Count	89 Count	90 Count	91 Count	92 Count	93 Count	94 Count	95 Count	96 Count	97 Count
West Desert Private	3028	2195	3601	3898		1927	1204	907	1410	1620	1945	2456
West Desert Public	413	580	688	945	375	478	476	474	477	490	450	393
West Desert State									112	1	0	1
West Desert Total	3441	2775	4289	4843	375	2405	1680	1381	1999	2111	2395	2850
Paunsaugunt Private	931	1431	977	936		733	785	975	974	889	994	927
Paunsaugunt Public	635	758	406	524	494	624	573	773	250	95	136	189
Paunsaugunt State									154	19	23	34
Paunsaugunt Total	1566	2189	1383	1460	494	1357	1368	1748	1378	1003	1153	1150
Awapa Plateau Priv.	157	102	131	106	65	341	417	358	201	304	109	156
Awapa Plateau Pub.	344	408	282	1013	292	88	47	44	130	152	244	190
Awapa Plateau Stat										4	16	11
Awapa Plateau Total	501	510	413	1119	357	429	464	402	331	460	369	357
Gunnsion Total											43	NC
Borden/Millard Co.											1	NC
Total Private	4116	3728	4709	4940	65	3001	2416	2240	2585	2813	3091	3539
Total Public	1392	1746	1376	2482	1161	1190	1096	1291	857	737	831	772
Total State									266	24	39	46
Total All	5508	5474	6085	7422		4191	3512	3531	3708	3574	3961	4357

Table 2. Summary of the Utah prairie dog control program, 1991-1997.

	1991	1992	1993	1994	1995	1996	1997
Control Permits Issued:	59	59	32	43	17	11	23
Persons Issued Permits:	47	44	24	33	15	9	13
Allowed Take:	4,150	3,520	1,050	1,190	680	520	1,065
Actual Take:	1,618	1,543	599	739	460	436	589
Success Rate:	39%	44%	58%	62%	68%	84%	55%
Location of Permittee:							
-West Desert	22 (47%)	17 (39%)	14 (58%)	19 (58%)	6 (40%)	5 (56%)	7 (54%)
-Paunsaugunt	25 (53%)	25 (57%)	7 (29%)	12 (36%)	8 (53%)	3 (33%)	4 (31%)
-Awapa Plateau	0 ( 0%)	2 ( 4%)	3 (13%)	2 ( 6%)	1 ( 7%)	0 ( 0%)	2 (15%)
-Gunnison						1 (11%)	
Location of take:							
-West Desert	640	556	266	505	171	253	327
-Paunsaugunt	978	937	243	198	290	133	187
-Awapa Plateau	0	50	90	36	0	0	75
-Gunnison						50	

#### 4.0 OTHER SPECIES AFFECTED BY HCP

The focal species of this HCP is the threatened Utah prairie dog. Other associated species potentially impacted, both directly and indirectly, as a result of the implementation of this HCP must be considered as well. Prairie dog colonies have been described as important habitat for 190 different vertebrate and invertebrate species (Miller et al. 1994). Of those, several are listed under the endangered species act or are classified as sensitive. Five different animal species classified as sensitive or threatened are associated with Utah prairie dogs (Table 3).

Table 3. Federally threatened, endangered, or species of concern, as well as state sensitive species associated with the Utah prairie dog in Iron County.

Common Name	Scientific Name	Status Code	
		Federal	State
Utah Prairie Dog	<i>Cynomys parvidens</i>	T	T
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	T
Burrowing Owl	<i>Speotyto cunicularia</i>	SOC	S
Ferruginous Hawk	<i>Buteo regalis</i>	SOC	T
Swainson's Hawk	<i>Buteo swainsoni</i>	SOC	S
Sage Grouse	<i>Centrocercus urophasianus</i>	none	S

**Key to Status Codes:** T = Threatened; SOC = Species of Concern (formerly C<sub>2</sub>); S = State Sensitive

#### 4.1 Bald Eagle (*Haliaeetus leucocephalus*)

Federally threatened bald eagles winter throughout Utah, including Iron County. Roost locations generally are large cottonwood trees associated with open fields, usually agricultural fields. Because Utah prairie dogs are also most abundant in areas associated with agricultural fields, take of Utah prairie dog habitat may also result in the loss of important bald eagle winter roost sites, and therefore result in take of bald eagles. However, discouraging winter development through implementing mitigation fees of \$1,000 per acre of clearance area destroyed as described in Section 6.14, may protect these roost sites during the winter when bald eagles are present.

Areas that contain bald eagle roost sites should not be developed between 15 November and 15 March when bald eagles are utilizing these areas. Developing outside of this time frame may still result in take of roost sites, but it will be less extreme if the area is developed after bald eagles have migrated. If development will occur at known bald eagle roost sites, the USFWS must be informed and a permit may be necessary. Failure to inform them and proceeding with development may result in unnecessary take of bald eagles and a possible violation. The USFWS will work with developers and suggest alternatives.

#### 4.2 Burrowing Owl (*Speotyto cunicularia*)

This small owl usually exists in association with fossorial or burrowing mammals such as Utah prairie dogs or ground squirrels, which provide necessary burrows. They were referred to by Zuni Indians as the “priest of the prairie dogs” due to their close association with prairie dogs (Haug et al. 1993). These owls lay their clutch of 6 to 11 eggs underground in prairie dog and ground squirrel burrows. Their diet generally consists of insects and small rodents. Burrowing owls migrate to neotropical regions for winter and then generally return to the same burrows if not disturbed (Heintzelman 1979).

Their populations appear to have declined across much of their range (Haug et al. 1993), and their distribution has become localized in many areas of the state as well (UDWR 1997).

Because of the proximity to humans and fragmented habitat, burrowing owls have become uncommon on the private lands expected to be taken under this HCP. Therefore, implementation of this HCP is not expected to negatively impact burrowing owls. Development of larger protected management areas on public lands for Utah prairie dogs will result in larger expanses of potential habitat, as well as a greater diversity of habitats, and thus a greater diversity of small rodents and other prey species utilized by burrowing owls. Therefore, there should be a net positive impact on burrowing owls as a result of implementing this HCP consistent with the Utah Prairie Dog Recovery Plan and Interim Conservation Strategy. If development occurs during the nesting season for burrowing owls, the young are not likely to survive. Therefore, if burrowing owls are present within the clearance area, development must be delayed until 31 July, when the young have fledged. However, trapping Utah prairie dogs can begin at the scheduled date of 1 July.

#### **4.3 Ferruginous Hawk (*Buteo regalis*)**

The ferruginous hawk is considered another neotropical migrant. Most ferruginous hawks leave Utah at the onset of winter, although some are observed throughout the winter, usually in agricultural habitat. Ferruginous hawks usually nest in open desert habitats, and often use the same territory year after year, although they may have several alternate nests within the territory. Nests are predominantly in juniper trees at the edge of the sagebrush-juniper ecotone (McDonald and Staats 1996). Clutch size ranges from 2 to 6 eggs, incubation lasts for 28 days, and the young fledge after about two months. The diet of these hawks is comprised largely of small to medium-sized mammals such as jackrabbits, cottontail rabbits, and prairie dogs (Olendorff 1993). This species is highly sensitive to human disturbance and habitat loss due to development, agricultural practices, and urban encroachment (UDWR 1997).

Because of the proximity to humans and disturbance, as well as fragmented habitat, ferruginous hawk nesting territories are not common on the private lands expected to be taken under this HCP. Therefore, implementation of this HCP is not expected to negatively impact ferruginous hawks. Development of larger protected management areas on public lands for Utah prairie dogs will result in a greater diversity of habitats, and thus a greater diversity of small rodents and other prey species utilized by ferruginous hawks. Therefore, there should be a net positive impact on ferruginous hawks as a result of implementing this HCP consistent with the Utah Prairie Dog Recovery Plan and Interim Conservation Strategy.

#### **4.4 Swainson's Hawk (*Buteo swainsoni*)**

This raptor nests across the western half of North America and can be found in open desert grasslands and rangelands in the northern valleys and west desert of Utah. Almost all Swainson's hawks winter on the pampas of Argentina which makes their migration one of the longest in distance of any North American hawk. Nests are constructed of grass and twigs, usually in trees or on ledges, less often on the ground. Clutches often contain two eggs and after hatching, the young fledge after a month

in the nest. Their prey consists of small mammals and insects. They often hunt from perches or by hopping around on the ground (Heintzelman 1979). This species is sensitive to human disturbance, and has lost large tracts of habitat. The best information indicates that Swainson's hawk populations have declined from historical levels (UDWR 1997).

Because of the proximity to humans and disturbance, as well as fragmented habitat, Swainson's hawks are not common on the private lands expected to be taken under this HCP. Therefore, implementation of this HCP is not expected to negatively impact Swainson's hawks. Development of larger protected management areas on public lands for Utah prairie dogs will result in a greater diversity of habitats, and thus a greater diversity of small rodents and other prey species utilized by Swainson's hawks. Therefore, there should be a net positive impact on Swainson's hawks as a result of implementing this HCP consistent with the Utah Prairie Dog Recovery Plan and Interim Conservation Strategy.

#### 4.5 Sage Grouse (*Centrocercus urophasianus*)

This game bird lives year round in sagebrush communities. During April and May, groups of males occupy leks, and generally return to the same strutting ground every year. The females lay from 6 to 9 eggs in a shallow depression under sagebrush. The diet of these birds includes insects, flowers, and buds but, in autumn and winter, their diet almost exclusively consists of sagebrush leaves (Ehrlich et al. 1988). Sage grouse populations have declined across much of its range in Utah. Since 1967, the abundance of male grouse attending breeding grounds in Utah has declined by 50%. Brood counts and harvest data show a similar downward trend. Historically, the range of sage grouse in Utah included portions of 29 counties. Currently, they only exist in scattered populations in 19 counties. Habitat loss and fragmentation from agricultural encroachment, urbanization, and overgrazing are the primary threats to this species (UDWR 1997).

Because of the proximity to humans and disturbance, as well as fragmented habitat, sage grouse are not known to occupy any of the private lands expected to be taken by this HCP. Therefore, implementation of this HCP is not expected to negatively impact sage grouse. Creation of openings and improvements to grasslands may benefit sage grouse populations in the West Desert (James Guymon, UDWR Southern Region Supervisor, pers. comm.).

### 5.0 IRON COUNTY - BACKGROUND/PROJECTIONS

Iron County lies in the southwest corner of Utah, and is bordered by Washington County on the south, the Nevada state line on the west, Beaver County on the north, and Garfield County on the east. Parowan City, settled in 1851, is the county seat and is one of several municipalities along the Interstate-15 corridor. Other incorporated areas include Paragonah, Enoch, Cedar City (the largest), Kanarraville, and Brian Head. It is also along this corridor where the majority of the county's

estimated 31,000 people reside (Brent Drew, County Economic Development Director, pers. comm.). Other areas of residential development with plans for future incorporation are the towns of Newcastle and Summit.

## 5.1 Existing Environment

Iron County occurs between Latitudes 37 and 39 degrees north at the convergence of the Great Basin, Mojave Desert, and Colorado Plateau physiographic regions. Elevation ranges from 5,050 feet in the valley floor just north of Lund to 11,307 feet at Brian Head Peak on the eastern edge of the county. All known Utah prairie dog colonies in Iron County are between 5,200 feet and 7,800 feet in the Basin and Range ecosystem. Because of the extremes in elevation, several mountain ranges, and the position of Iron County on the edge of the Great Basin and Mojave Desert, there are diverse soil, plant, and animal communities.

Precipitation in the area occupied by Utah prairie dogs averages 11.6 inches per year. Most precipitation occurs during the winter months, and during sporadic thunderstorms that occur in late summer. Predominant vegetation in the Basin and Range habitat where Utah prairie dogs occur includes a variety of native and nonnative grasses, sagebrush (*Artemisia* sp.), rabbitbrush (*Chrysothamnus* sp.), and juniper (*Juniperus* sp.).

## 5.2 Land Ownership

There are 1,905,661 acres of land in Iron County spread among seven ownerships. Of these, 64% are under Federal administration by the BLM, USFS, and the NPS, and 7.5% are owned by the State of Utah. Only 28% of the land area in Iron County is privately owned (Table 4).

Table 4. Distribution of land ownership, in acres, in Iron County, Utah (from Iron County General Plan 1995).

Landowner	Acres	Percent
Federal		
Bureau of Land Management	963,704	50.6
Forest Service	241,167	12.7
National Park Service	8,733	0.5
Non Federal		
Private	545,822	28.6
Utah State School Trust	135,794	7.1
Utah State Division of Wildlife Resources	7,941	0.4
Paiute Indian Reservation	2,500	0.1
TOTAL	1,905,661	100

### 5.3 Population Estimates and Projected Growth

Iron County, like much of southwestern Utah, is in the midst of significant growth and development. Between the census years of 1980 and 1990, Iron County's population increased 19.8% (Table 5). Since then, growth has continued, and is increasing at an even greater rate. Human population growth has averaged approximately 5.9% over the past 10 years. In 1993, the human population increased by 6.3%, followed by a 5.8% increase in 1994 (Iron County General Plan 1995), and an estimated 6.7% growth increase in 1995 (Brent Drew, Iron County Economic Development Department, pers. comm.). Based on announced expansion by several manufacturing companies, growth is expected to remain high for several years, up to 10%. By the year 2017, the population level in Iron County will increase approximately 95% to 67,395, based on a conservative growth estimate of 3.24% (Governors Office of Planning and Budget 1997). Much of the future growth is expected in "the broad expanse of high desert and the ranch lands of Cedar Valley" (Colgan 1997) where the majority of Utah prairie dogs are located. In Iron County, 18% of Utah prairie dog clearance areas (7,322/40,969 acres) are within incorporated boundaries, while the remaining 82% of clearance area acres are in the currently unincorporated portion of the county, primarily in future growth and annexation areas adjacent to incorporated cities.

Table 5. Historic and projected population growth for incorporated cities and unincorporated areas in Iron County, Utah (Iron County General Plan 1995, Cedar City/Iron County Economic Development Department 1996, Governors Office of Planning and Budget 1997).

	YEAR						
	1970	1980	1990	1996	2000	2010	2017
Brian Head	NA	77	109	110	125	172	215
Cedar City	8,946	10,972	13,443	22,500	25,561	35,160	43,953
Enoch	120	1,669	1,947	2,900	3,295	4,532	5,665
Kanarraville	204	255	228	230	285	359	449
Paragonah	275	310	307	320	382	500	625
Parowan	1,423	1,836	1,873	2,800	3,181	4,376	5,470
<u>Unincorporated</u>	<u>1,209</u>	<u>2,230</u>	<u>2,882</u>	<u>5,640</u>	<u>6,407</u>	<u>8,814</u>	<u>11,018</u>
Total County	12,177	17,349	20,789	34,500	40,463	53,913	67,395

It is estimated that one acre of open space is lost for every increase in new persons. The loss is due to construction of housing, roads, schools, commercial buildings, infrastructure, etc. (quote by Cary Peterson, Utah Ag. Commission). Therefore, based on an estimated increase of 32,895 persons in Iron County during the life of this plan, it is estimated that 32,895 acres of open space will be developed - much of which will be in occupied Utah prairie dog habitat.

## 5.4 Land Use and Planning

Within Iron County, there are several incorporated and unincorporated communities comprised primarily of privately owned lands. Iron County has evaluated growth in terms of age classes to anticipate the requisite age-specific services which must be provided in the future (e.g., public safety, child care, health care, education, employment, recreation, etc.) in each of these communities, as well as the unincorporated areas. Prolonged growth, at the rates described above, relies on an equal increase in development, both residential and commercial, to meet societal needs. A General Plan, completed in October of 1995, was aimed at planning for growth during the next 20 years.

In developing the Iron County General Plan (1995), a subdivided functional planning area approach was taken. This planning area, termed the Urban Growth Boundary, was subdivided into four "Tiers" or subareas. This concept was based on the recognition that growth and development of different areas can present a wide array of different problems. The four Tiers defined in the Iron County General Plan (1995) are as follows:

- Tier 1. Urbanized Areas - incorporated areas with urban growth which have existing public facility and service capabilities.
- Tier 2. Urban Expansion Area - areas surrounding incorporated cities that have limited access to public facilities or services but which could be provided through annexation.
- Tier 3. Future Urbanizing Area - areas characterized by urban growth and separation from existing incorporated cities or towns which are encouraged to gain their own public services through incorporation.
- Tier 4. Rural Area - areas characterized by rural development or environmentally sensitive lands which are not presently served, or served in only a limited way with public facilities, and which are expected to retain this development pattern over the life of the plan.

By making these functional separations regarding land use planning in Iron County, officials will "allow for more specific application of density regulations, impact fees, concurrence regulations, and environmental considerations" (Iron County General Plan 1995). These same planning units can be used to estimate quantity (Table 6) and location of future growth for the next 20 years, and determine potential impacts of growth and development on Utah prairie dogs in each of those growth tiers in terms of take.

## 5.5 Utah Prairie Dog Clearance Area

For purposes of this plan, and to quantify take, clearance areas have been defined as those areas where Utah prairie dogs or their sign have been mapped since 1976 (Utah prairie dog habitat), plus an additional area surrounding that which encompasses an estimate of home range, disturbance

distance, and mapping error. Any new colonies that are discovered during annual monitoring will be added to the maps by UDWR and must undergo the same clearance procedures as previously mapped clearance areas.

Home range diameter of Utah prairie dogs, and ecologically similar white-tailed prairie dogs, averages 750 feet (Crocker-Bedford 1975, Elmore and Workman 1976, Wright-Smith 1978, Jacquart et al. 1986). Therefore, the diameter of the average home range was used as the distance around mapped colonies that would encompass most of a prairie dog's home range habitat. Disturbance distance, or the distance at which disturbance affects a prairie dog's normal behavior, was estimated to be 350 feet (Ashdown 1995). This distance was added to the home range distance. Finally, a value of 200 feet was added to this to take into account mapping errors, changes in mapping scale, etc. Therefore, a total of 1,300 feet (home range + disturbance + mapping error) was added to the outer diameter of each mapped polygon representing known Utah prairie dog habitat to determine clearance areas (Fig. 3).

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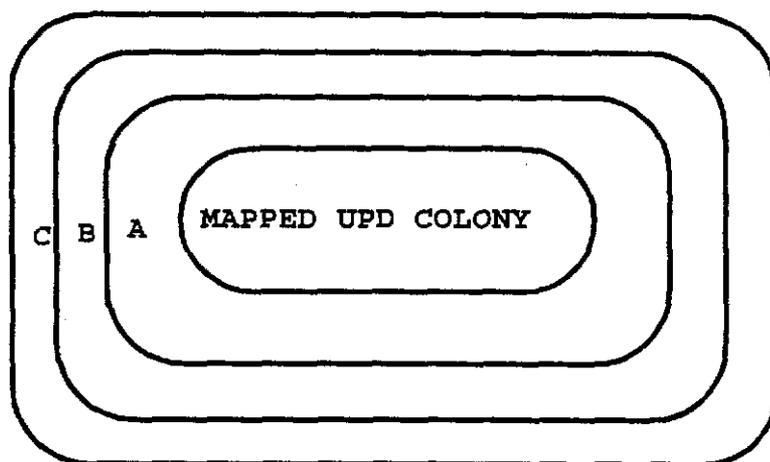
Figure 3. Example of delineation of Utah prairie dog clearance areas.

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**A = Home Range Distance  
(750')**

**B = Disturbance Distance  
(350')**

**C = Mapping Error (200')**



### 5.6 Utah Prairie Dog Analysis Area

For purposes of estimating projected take during the life of this plan, a Utah prairie dog analysis area was delineated containing all known Utah prairie dog habitat on private lands in Iron County. The analysis area was delineated by outlining the area containing all private lands within a distance of approximately one mile from mapped Utah prairie dog habitat (Fig. 4). Utah prairie dog clearance areas (1995 data) were determined and were then overlaid on the analysis area to calculate acreage (Fig. 5). The actual acreage of Utah prairie dog clearance areas, as defined in Section 5.5, was then calculated for each of the areas identified in Table 6. The analysis area totaled 139,334 acres, of which 40,969 acres are considered Utah prairie dog clearance areas. The 10-year average count of

2,127 adult Utah prairie dogs on those 40,969 acres of private lands results in an average density of 0.052 adult Utah prairie dogs per acre. A 10-year average was used to determine prairie dog density instead of one year's count since prairie dog numbers fluctuate greatly.

Figure 4. Map of Iron County showing analysis area

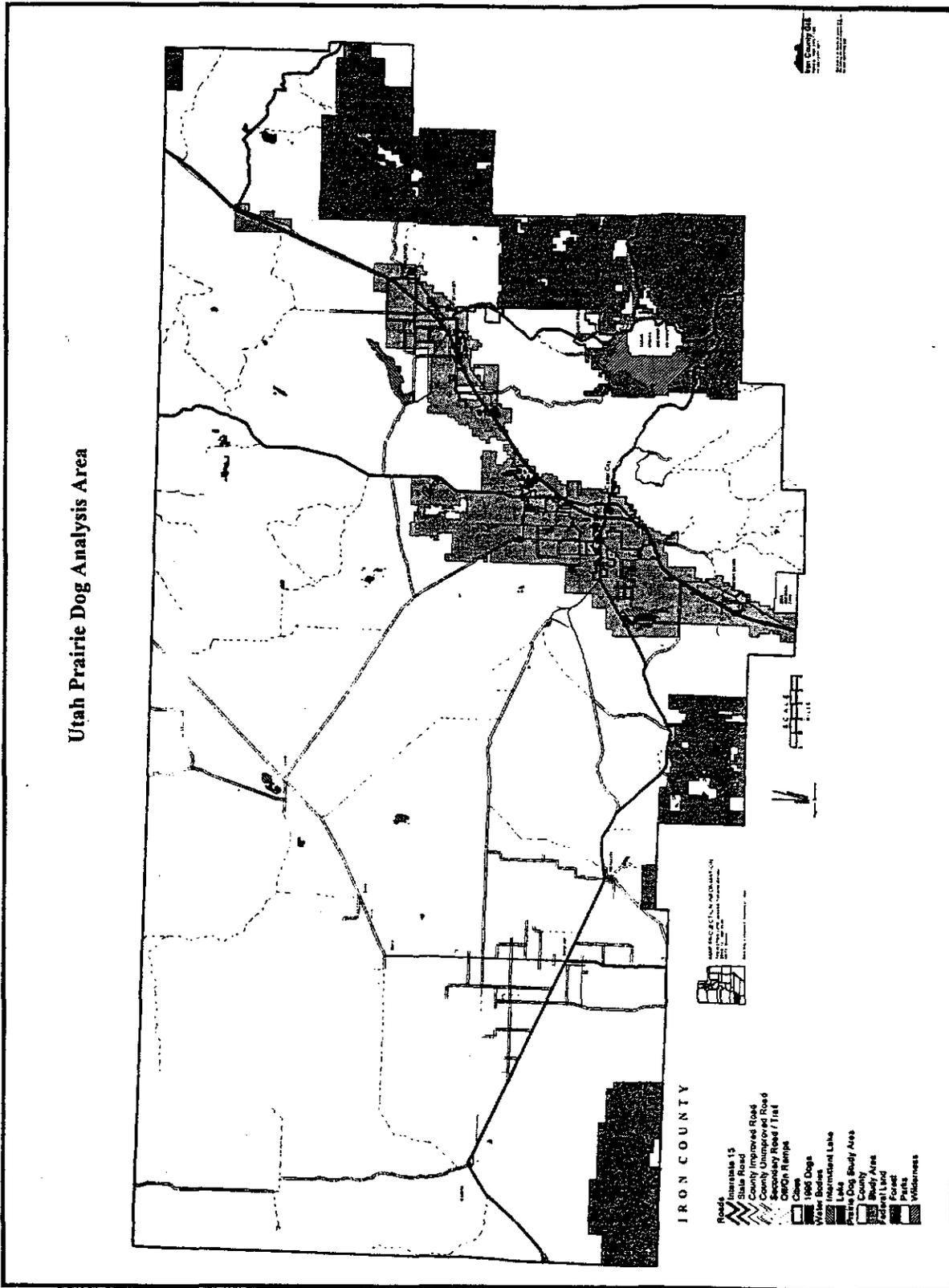


Figure 5. Map of analysis area showing overlay of Utah prairie dog clearance areas.

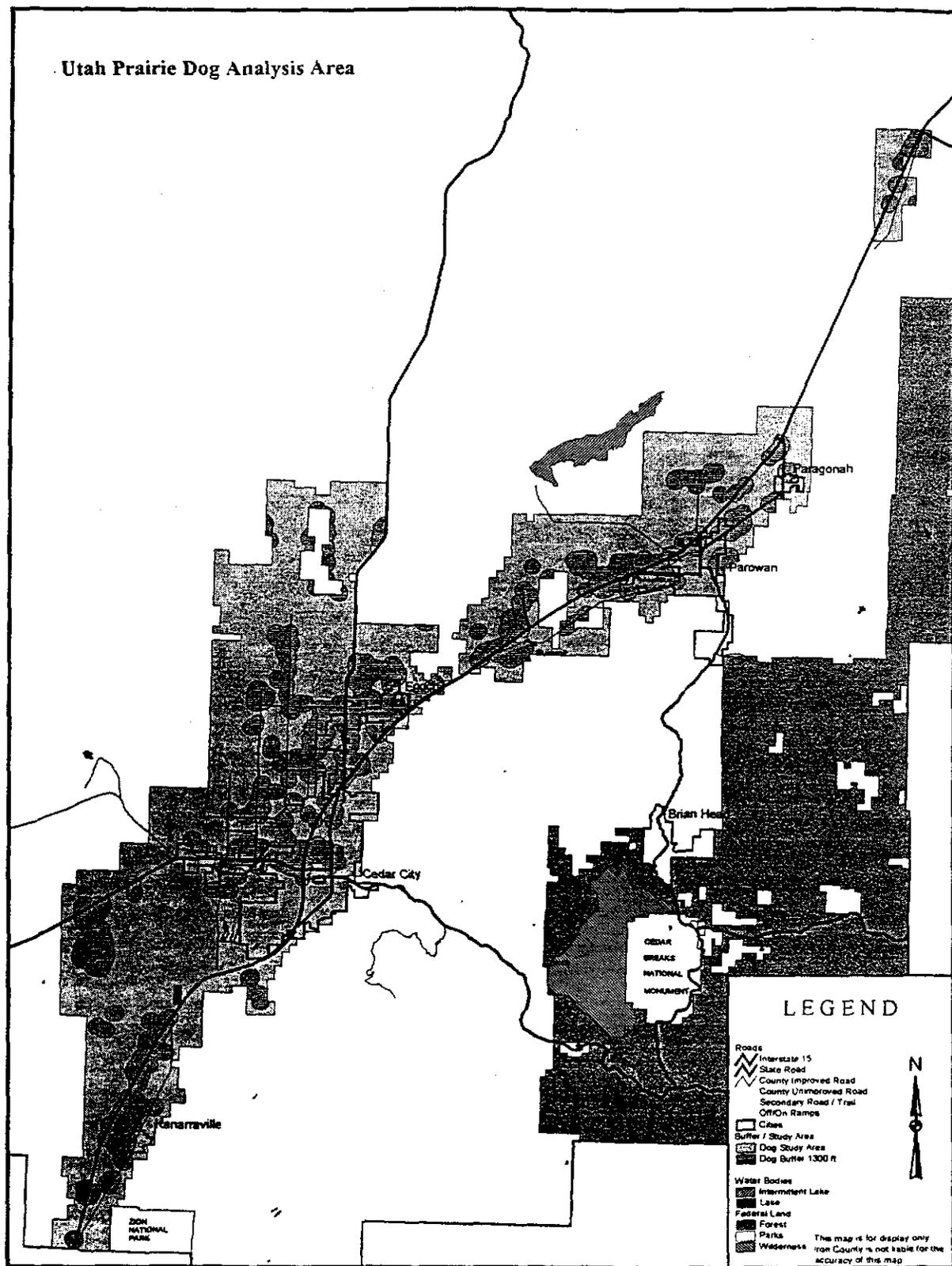


Table 6. Acres of land in the Utah prairie dog analysis area (Iron County) by jurisdiction, and amount of Utah prairie dog clearance areas in each, based on maps in the Iron County General Plan (1995) [area calculated by Ivan Spencer, Iron County engineers office].

Municipality	Total acres	UPD Clearance Areas (acres)	Tier
Cedar City	12,396	4,381	1
Enoch	1,927	1,730	1
Parowan	2,510	1,041	1
Kanarraville	287	101	1
Paragonah	331	69	1
Summit	899	415	3
Unincorporated - adjacent to cities	32,025	12,471	2
Unincorporated - rural	85,802	19,181	4
BLM	3,157	1,580	4
<b>Total:</b>	<b>139,334</b>	<b>40,969</b>	

### 5.7 Actions Likely to Result in Incidental Take

Actions addressed in this HCP that are likely to result in incidental take include alteration or destruction of habitat due to building construction or changes in land use; indirect effects associated with development such as habitat fragmentation and increased disturbance and depredation by pets; trapping and translocating of Utah prairie dogs from approved development areas, recreational (e.g., golf course) and maintenance sites, agricultural areas, sensitive areas (e.g., cemeteries), and areas where safety concerns exist (as determined by the Implementation Committee (See Sec. 6.21)); and issuance of control permits allowing numbers of Utah prairie dogs to be reduced by shooting or trapping.

### 5.8 Anticipated Levels of Habitat Loss

With no limitations on development of habitat, it is anticipated that growth and development during the life of this plan would result in the permanent loss of approximately 9,507 acres of Utah prairie dog habitat (Table 7) and 494 adult Utah prairie dogs. This averages 475 acres per year and 25 adult Utah prairie dogs per year, based on an average density of 0.052 adult Utah prairie dogs per acre (see example below). Actual amount of take will be dependent upon successful implementation of recovery and mitigation efforts described in Section 6.

The projected level of permanent take of habitat was calculated by multiplying a value of one acre per person (quote by Cary Peterson, Utah Ag. Commission; Also see Section 5.3 above) by the projected increase in number of persons inhabiting Utah prairie dog habitat over the life of this plan in each of the jurisdictions listed in Table 7.

**Example of Permanent Take Calculation:** If Tier 1 areas contain 7,322 acres of UPD habitat out of a total of 17,943 acres (41%), and the human population is expected to increase by 26,481 persons over the life of this plan in Tier 1 areas, then projected growth can be estimated as 41% x 26,481 persons x 1 acre per person = 10,857 acres of habitat.

Table 7. Acres per Tier area, percent of Utah prairie dog habitat per Tier area, estimated human population per Tier area, projected human population growth during length of HCP per Tier area, and projected take of habitat (acres) per Tier area.

Tier	<u>A</u>	<u>B</u>	<u>C<sup>1</sup></u>			<u>D</u>	<u>E<sup>2</sup></u>
	Total Acres	Estimated UPD Habitat (Acres)	% Habitat Acres	Estimated Population (1997)	Estimated Population (2017)	Increase in Population	Estimated Take of Habitat
1	17,451	7,322	42	29,681	56,162	26,481	7,322 <sup>3</sup>
2	32,025	12,471	39	5,640	11,018	5,378	2,097
3	899	415	46	200	391	191	88
4	88,959	20,761	23	0	0	0	0
Total	139,334	40,969	29	35,521	67,571	32,050	9,507

<sup>1</sup>Determined by dividing B by A

<sup>2</sup>Determined by multiplying (C x D) x 1 acre (per person)

<sup>3</sup>Actual calculation based on above formulas is 11,122 acres, but E cannot be greater than B

Based on a projected take of 9,507 acres of 40,969 acres of habitat, 23% of mapped habitat would be lost. From a 10- year average count of adult Utah prairie dogs, this would result in a projected take of approximately 494 adult Utah prairie dogs, and up to 1,778 total Utah prairie dogs, assuming average productivity of 4.0 young/adult female.

## **6.0 HABITAT CONSERVATION PLAN - PROVISIONS**

A Habitat Conservation Plan must include a description of the plan area; the time frame of the plan; measures to monitor, minimize, and mitigate take; a description of funding that will be available to implement the plan; and alternative actions and reasons why they are not being utilized. Listed below are those items, which constitute the viscera of this HCP.

### **6.1 Plan Area**

The areas considered in this HCP are all private (non-federal) lands inside the political boundaries of Iron County, Utah. Specifically, all known clearance areas where Utah prairie dogs or their sign have been mapped on private lands since 1976, as described in Section 6.8, as well as all future locations where they are discovered on private land, will be covered under this Section 10 permit. Actions on federal lands and actions that are partially or totally funded with federal funds are covered under Section 7 of the Endangered Species Act, and thus are not covered under this Section 10 permit.

The Iron County HCP is designed to provide coverage for ESA Section 9 for all ground disturbing actions on non-federal lands. Protection through this HCP is offered to those obtaining a building permit through the process described in Section 6.9. However, not all activities resulting in the alteration/destruction of habitat require a building permit. Protection of this HCP may be extended to those wishing coverage for ESA Section 9. Protection may be provided for ground disturbing activities in three categories:

1. A building permit is required for development.
2. A building permit is not required, but some other type of permit or approval is needed (e.g., Christmas tree farms, motocross, roads).
3. No permit is needed and town/county does not need to be notified (e.g., erecting a farm building).

Anyone requesting protection under this HCP must follow the building permit process as outlined in Section 6.9 even if no building permit is required.

### **6.2 Duration of Plan/Coordination**

This Habitat Conservation Plan and accompanying Section 10(a) Incidental Take Permit, are to be in effect for 20 years (from 1998 through 2017) to allow for continued planned development in Iron County concurrent with the establishment of Utah prairie dogs on public lands through incremental implementation of this plan.

Implementation of this plan will occur in two stages. The first stage will be for five to ten years, corresponding to the approximate duration of the Utah Prairie Dog Interim Conservation Strategy

(see Sec. 3.12). During this first stage, enhancement of habitat at existing public land prairie dog complexes will occur, as well as research into specific habitat requirements of Utah prairie dogs and best management practices for Utah prairie dogs on public rangelands. Bi-annual review meetings will be held to review annual work accomplishments and develop annual work plans; to discuss compliance with the plan by all signatories of the HCP; and to resolve questions and conflicts that may arise. At least some of these meetings will take place at translocation site locations where success and viability of translocated Utah prairie dogs will be reviewed and recommendations for maintaining and/or manipulating the sites will be made.

The second stage of this plan will cover through year twenty. It is anticipated that following completion of research and habitat enhancements during the first phase of the plan, management recommendations for the Utah prairie dog will change, and the Utah Prairie Dog Recovery Plan will be amended to reflect the best current biological knowledge. At that time, it is anticipated that proposed mitigation may also need to be modified to be consistent with the new management recommendations. Bi-annual review meetings to discuss progress, updates, and modifications will continue each year as described above. At least some of these meetings will take place at translocation site locations where success and viability of translocated Utah prairie dogs will be reviewed and recommendations for maintaining and/or manipulating the sites will be made.

### 6.3 Public Health Issues

#### Plague

Plague is a flea-transmitted infection of rodents caused by the nonnative bacterium *Yersinia pestis*. The bacterium is maintained in rodent reservoir species (Poland and Barnes 1979), but can also survive in the soil of deserted burrows (Christie 1982). Prairie dogs as well as other rodent species (e.g., ground squirrels, chipmunks), are known reservoirs of plague. Many other mammals are carriers of plague (e.g., mule deer, coyotes). It has been suspected that a few Utah prairie dog colonies in Iron County have crashed due to plague though none have been confirmed. Plague is transmitted throughout the colony and to other mammals via flea bites, body fluids, and excreta. A plague outbreak can kill an individual prairie dog within 10 days, but few survive more than 48 hours once infected (Mike Bodenchuk, Wildlife Services, pers. comm.). It is likely that an outbreak will be unnoticed until after a colony is decimated.

Plague is found in the environment at any time, but there will not necessarily be an outbreak. Therefore, a positive test for *Y. pestis* in fleas is not enough to confirm plague in Utah prairie dog colonies. Fleas found on Utah prairie dogs may test positive for the bacterium, but the prairie dogs may not have been exposed to plague. There are no cases of a human contracting plague from an individual animal, except in cases where prairie dogs are used as a food source.

There is no monitoring for plague being conducted on private lands, therefore the USDA-APHIS Wildlife Services (formerly Animal Damage Control) will respond to two concerns: 1) when an individual Utah prairie dog comes into contact with the public, and 2) when there is a suspected plague outbreak.

Utah prairie dogs that come into contact with the public (e.g., wandering into a building) will be tested for the plague bacterium. If the prairie dogs test positive, they will be destroyed and efforts will be made to determine which colony they came from. The colony will be observed and if there is no apparent outbreak, no action will be taken. If the colony is experiencing a die-off suspected to be caused by plague, the disease will be allowed to run its course. The colony will be monitored closely for 10 days, after which the number of any surviving prairie dogs will be noted and burrow use determined. Wildlife Services will treat the area for fleas following their standard methods of control and will use the best science available to control the vectors of plague (Mike Bodenchuk, Wildlife Services, pers. comm.).

The spread of plague to humans is of the greatest concern when the prairie dogs die off leaving a great number of plague infected, free living fleas in the environment. If a family pet or person walks through the colony after it experiences a die-off, these infected fleas may jump on them in search of a new host. This is when the public is at the greatest risk. Wildlife Services will respond to plague-like outbreaks, but their control efforts will concentrate on the fleas and not on the numerous mammal species that may be reservoirs or carriers.

If a plague outbreak is suspected in a prairie dog colony, the Utah Public Health Department will authorize media releases to inform the public, as well as post signs around the infected area.

#### Hanta Virus

Hanta virus is not known to occur in Utah prairie dogs, but there is a potential for all rodent species to be carriers. Hanta virus is found in the environment at any time and is transmitted through aerosol inhalation, but it is rare for humans to contract it. If a person is diagnosed with Hanta virus and it is determined that it was transmitted by Utah prairie dogs, the Utah Public Health Department recommends extermination of the colony (Gary Edwards, Southwest Utah Public Health Department, pers. comm.). The Health Department must notify the USFWS of their intention prior to taking any measures toward eradication. The Implementation Committee will make the final decision regarding the colony by consensus.

#### Rabies

It is uncommon for Utah prairie dogs to contract rabies, therefore there is no known risk of the spread of rabies virus to humans through contact with prairie dogs.

### **6.4 Types of Take**

Two types of take will occur under this incidental take permit: permanent take where habitat is permanently destroyed; and non-permanent take where habitat is not destroyed, but the number of Utah prairie dogs in a colony is reduced. Permanent take from development activities such as residential or commercial construction, road construction, parking lot construction, excavation, etc. adversely affects any resident Utah prairie dogs and any future occupation of the area by Utah prairie dogs and contributes to a net loss of habitat. Non-permanent take results in a reduction of numbers

of animals, but no net loss of habitat. Sources of non-permanent take will include recreation areas, safety concern areas, areas previously cleared of Utah prairie dogs, and areas requiring maintenance (see definitions pp. 33-34).

## **6.5 Non-Permanent Take**

Non-permanent take will be restricted to Utah prairie dogs causing agricultural damage to croplands, pastures, and private rangelands; previously cleared areas that have become recolonized after construction has been completed; areas developed for recreational purposes that still remain suitable as habitat (e.g., golf course, softball fields); areas requiring maintenance (e.g., roads), sensitive areas (e.g., cemeteries, archaeological sites), and areas where safety concern exists (e.g., airport runway) as identified by the Implementation Committee. An area can only be classified as one of these categories, per the definitions below. For example, a recreation area cannot also be classified as a safety concern area. In non-permanent take situations, as many Utah prairie dogs as can be accommodated at translocation sites will be live-trapped and translocated. In situations where translocation sites cannot accommodate demand, landowners will be issued permits to remove the remaining allowed amounts by shooting or trapping, with limitations as described in Table 8, except on private rangelands adjacent to translocation sites. Permits will be issued by UDWR, and will be valid for 30 days, after which time the permittee must submit a report of take. If deemed acceptable and such that it does not exceed the limits specified in Table 8, the permit can be renewed. Non-permanent take currently is occurring in agricultural areas only under a special Section 4(d) rule (See Section 3.9). Provisions of the 4(d) rule will apply to this non-permanent take in agricultural areas in Iron County either under this HCP or as a separate 4(d) rule. Normal agricultural practices will be allowed to continue. However, practices that disturb more than the top 18 inches of soil will fall under Section 9(B) of the Endangered Species Act and may be considered take. If more than 18 inches will be disturbed within Utah prairie dog clearance areas, the USFWS must be notified and a clearance survey completed. In the case of private rangelands, Wildlife Services will be responsible for controlling excess Utah prairie dogs through trapping or shooting based on criteria outlined in this HCP. The amount of non-permanent take will be restricted to the amounts specified in Table 8 for each of the different situations. The numbers in Table 8 do not suggest taking all individuals in a colony, but rather reducing the number of animals in the colony, resulting in a maintenance or over-harvest strategy.

In the case of areas previously developed which have not undergone a Section 10 clearance, but which have become occupied by Utah prairie dogs, the area will be treated similar to undeveloped sites. The landowner will have to have a clearance survey conducted, an assessment of take completed, and schedule to have Utah prairie dogs trapped and translocated.

Recreation Areas = Areas created and managed specifically for recreational purposes such as parks, playing fields, and golf courses. If Utah prairie dogs occupy the site prior to development of such areas, then the site must first go through the building permit clearance process.

Maintenance Areas = Infrastructure areas where Utah prairie dogs have colonized after the infrastructure has been completed, and where Utah prairie dogs are causing a demonstrable harm to the infrastructure.

Sensitive Areas = Areas where the presence of Utah prairie dogs may cause damage (e.g., cemeteries, archaeological sites).

Safety Concern Area = Areas where a demonstrable safety concern exists due to the presence of Utah prairie dogs (e.g., airport runway) as determined by the Implementation Committee.

Agriculture Area = Areas greater than five acres in size that are cultivated for crops such as alfalfa, used as pasture for domestic livestock (horses, cows, sheep), or on which livestock is grazed (rangelands).

Previously Cleared Area = An area that was permitted for development after a clearance survey was conducted, and into which Utah prairie dogs have (re)colonized following development. This does not apply to areas cleared of Utah prairie dogs that will not be developed within one year.

Table 8. Maximum amount of non-permanent take (number of Utah prairie dogs) that will be permitted per calendar year for each activity for which non-permanent take is permitted.

Activity	Min. No. Adults Before Take Is Allowed	Percent of Spring Count <sup>1</sup> (Mar - May)	or	Percent of Total Count <sup>1</sup> (Jun - Aug)	Maximum Total
Agriculture					1,000
Cultivated	10	200%		60%	
Pasture	10	200%		60%	
Rangelands	25	250%		70%	
Prev. Cleared Areas	3	100%		100%	100
Recreation Areas/ Maintenance Areas	10	200%		60%	50
Safety Threat Areas	1	100%		100%	50 <sup>2</sup>
Sensitive Areas	1	100%		100%	50 <sup>2</sup>
<b>Total Allowed Non-Permanent Take</b>					<b>1,250</b>

<sup>1</sup>As determined by UDWR or qualified biologist

<sup>2</sup>Or until all prairie dogs are removed

## 6.6 Permanent Take

The majority of Utah prairie dogs (86%) and Utah prairie dog habitat (69%) in Iron County occur on private property, but recovery success is dependent upon establishment of Utah prairie dogs on public lands. Therefore, allowable levels of permanent take of habitat and/or animals on private property will depend upon successful creation of new habitat and establishment of Utah prairie dogs on public lands such that there is, at the very least, no loss of habitat potential. Habitat potential is the carrying capacity of different habitat types. For example, established habitat associated with irrigated agricultural areas might have a potential of 10 adult Utah prairie dogs per acre, whereas new habitat on rangelands might have a potential of only one adult Utah prairie dog per acre. Therefore, maximum annual amounts of allowed permanent take will be dependent upon:

1. parameters determined from population modeling to ascertain levels of take that will not further jeopardize the species,
2. successful establishment of Utah prairie dogs on public lands, or long-term conservation of prairie dogs on private lands (e.g., conservation easements), and
3. implementation of measures to minimize and mitigate take (see Sections 6.12 and 6.13 below).

Permanent take per calendar year will be quantified in terms of acres of habitat and numbers of animals taken. Because Utah prairie dogs may no longer exist at many of the locations on private lands where they have been mapped, but habitat remains intact, permanent take will be limited by either the number of Utah prairie dogs or number of acres of habitat permanently taken. When the allowed limit of one of these variables (number of acres or number of Utah prairie dogs) is reached, no further take will be allowed during that calendar year. The maximum allowed permanent take of animals will be not more than 10% of the average spring count of adult Utah prairie dogs on public lands during the preceding five years. The percentage of allowed take will increase to 15% once counts on public lands in the West Desert Recovery Area reach 1,500 adult Utah prairie dogs as long as the other two conditions, number of public land complexes and number of public land acres, are met (Table 9). The five-year count (1993-1997) of adult Utah prairie dogs on public lands in the West Desert Recovery Area averaged 457, therefore, allowed take would be 46 prairie dogs if the criteria listed above are met. The maximum allowed take of habitat initially will not exceed one percent of the total private land habitat, and will increase as additional public land sites become established (see Table 9).

As more acceptable habitat is created/enhanced, and additional Utah prairie dogs are established, additional permanent take will be allowed (Table 9 and Fig. 6). Acreage protected through the establishment of long term conservation easements on private property will count towards the protected land total as well. The remainder of Utah prairie dogs needed for translocation to public lands will come from non-permanent sources (see Table 8). Utah prairie dogs translocated to recovery sites, although considered taken for purposes of development, will still be protected under state law and the ESA, and will be afforded full protection of a listed species under the ESA.

Maximum allowed permanent take will be dependent upon implementation of mitigation efforts and establishment of Utah prairie dogs on public lands in the West Desert Recovery Area, and shall not exceed that listed in Table 9 below. Allowable take is expected to always be at least 40 individuals or 400 acres based on current distribution and numbers. Permanent take that remains unused during one year will be credited for the following year only. Failure to implement mitigation measures will result in no allowable take.

As of 1997, there were approximately 1,800 acres of occupied habitat on public lands in the West Desert Recovery Area. This area included 11 separate complexes (#'s 0110, 0113, 0114, 0118, 0119, 0120, 0121, 0122, 0123, 0124, and 0125) and totaled 393 adult Utah prairie dogs. The 11 complexes included those that were comprised of all public lands, or contained both public and private lands. Within these complexes, only public land acres and the prairie dogs found there, were included in the totals. In the following table, the baseline for public land complexes is determined to be 11 at the completion of this HCP.

Table 9. Maximum allowable permanent take of Utah prairie dog habitat (acres) or number of animals, whichever is achieved first, that would be allowed per year pending implementation of required minimization and mitigation actions. All three categories (number of complexes, number of acres, and number of prairie dogs) must be met before next higher level of take would be allowed.

No. Public Land Complexes	No. Public Land Habitat Acres in the West Desert <sup>1</sup>	Minimum No. Public Land Adult Utah Prairie Dogs <sup>2</sup>	Maximum Allowed Permanent Take/Year <sup>3,4</sup> (UPDs)	Maximum Allowed Permanent Take/Year (Acres)
2	400	400	10	400
3	600	600	10	450
4	800	800	10	500
5	1,000	1,000	10	550
6	1,200	1,200	10	600
7	1,400	1,400	10	650
8	1,600	1,600	15	700
9	1,800	1,800	15	750
10	2,000	2,000	15	800
11	2,200	2,200	15	850
12	2,400	2,400	15	900
13	2,600	2,600	15	950
14	2,800	2,800	15	1,000
15	3,000	3,000	15	1,050

<sup>1</sup>Mapped polygons only - does not include home range distance, disturbance distance, or mapping error. Includes acreage protected through purchase and conservation easements.

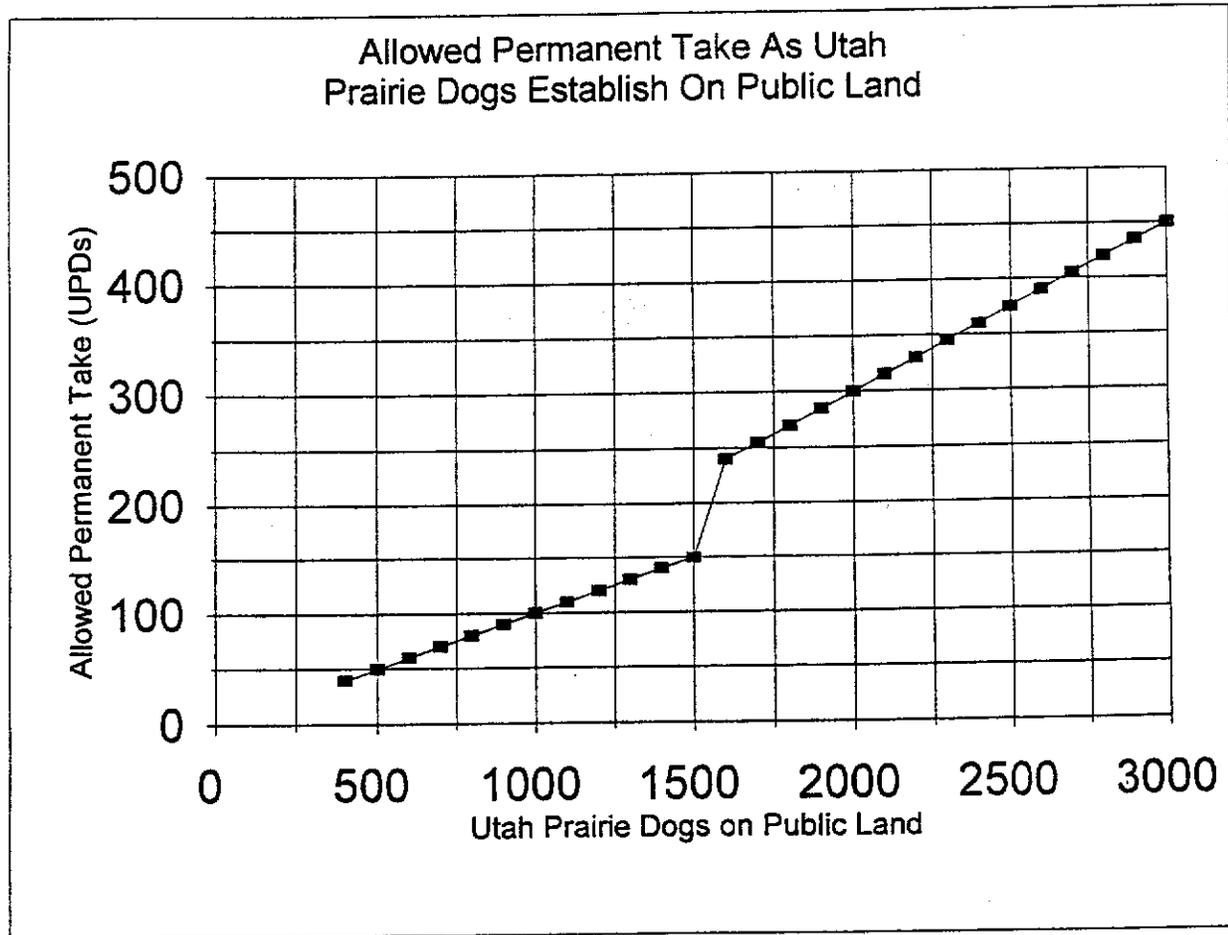
<sup>2</sup>As determined during annual spring counts of adults

<sup>3</sup>Percent of five-year average count of adult Utah prairie dogs on public land

<sup>4</sup>May be increased by an additional 10% for conservation easements (see page 51)

**EXAMPLE:** In 1997, there were 11 occupied public land complexes totaling approximately 1,800 acres containing 393 Utah prairie dogs in the West Desert Recovery Area. Based on Table 9 and a five-year average count of 457 adult Utah prairie dogs on public land, allowed take would be 46 Utah prairie dogs or 400 acres, whichever is reached first.

Figure 6



There will be some instances where the terms set by Table 9 will not be adequate. The following does not cover all possible scenarios, but some of the more common ones that may arise during the implementation of this HCP.

Possible Scenario	Options
<p>A developer wishes to develop outside of the time Utah prairie dogs can be translocated (e.g., winter) and the area falls within a clearance area. A survey of the area determines prairie dog occupation through prairie dog sign.</p>	<p>Reduce size of development to avoid clearance area.</p> <p>Provide additional mitigation such as conservation easement or habitat acquisition (See Section 6.13 and Table 10).</p> <p>Allow development, but take, as determined through the process described in Section 6.14, will count against the allowed take for year. The developer must pay mitigation fee of \$1,000 per acre of Utah prairie dog habitat taken.</p>
<p>A developer wishes to develop outside of the time Utah prairie dogs can be translocated (e.g., winter). The amount of prairie dogs or prairie dog habitat that will be taken, exceeds the allowed permanent take for the year.</p>	<p>Reduce size of development to avoid clearance area.</p> <p>Modify permit to develop in phases from year to year so take will not be used entirely by one developer in a single year.</p> <p>Provide additional mitigation such as conservation easement or habitat acquisition (See Section 6.13 and Table 10).</p>

Possible Scenario	Options
<p>Developer applying for building permit has UPDs on property totaling the allowable take limit or is developing acres totaling the allowable take limit. County issues building permit, but postpones their participation in county HCP because the developer will use up entire take.</p>	<p>Reduce size of development.</p> <p>Modify permit to develop in phases from year to year so take will not be used entirely by one developer in a single year.</p> <p>Provide additional mitigation such as conservation easement or habitat acquisition (See Section 6.13 and Table 10).</p>
<p>Permanent take of UPDs for year is approaching limit. Developer has UPDs on property and will exceed the take limit.</p>	<p>If take limit has not been reached and a developer will exceed take if development occurs, it will be allowable to exceed the limit by 10 individuals. Any amount over the original take limit will be deducted from take limit of following year.</p> <p>Reduce size of development.</p> <p>Can develop in phases from year to year so take will not be used entirely by one developer in a single year.</p> <p>Provide additional mitigation such as conservation easement or habitat acquisition (See Section 6.13 and Table 10).</p>

Possible Scenario	Options
<p>Permanent take of UPD habitat acres for year is approaching limit. Developer has a parcel of land that will put the acres of habitat taken over the limit.</p>	<p>If take limit has not been reached and a developer will exceed take if development occurs, it will be allowable to exceed limit by 100 acres. If the developer exceeds initial take, they will pay a mitigation fee of \$1,000 per acre. Any amount over the original take limit will be deducted from take limit of following year.</p> <p>Reduce size of development to avoid clearance area.</p> <p>Can develop in phases from year to year so take will not be used entirely by one developer in a single year.</p> <p>Provide additional mitigation such as conservation easement or habitat acquisition (See Section 6.13 and Table 10).</p>

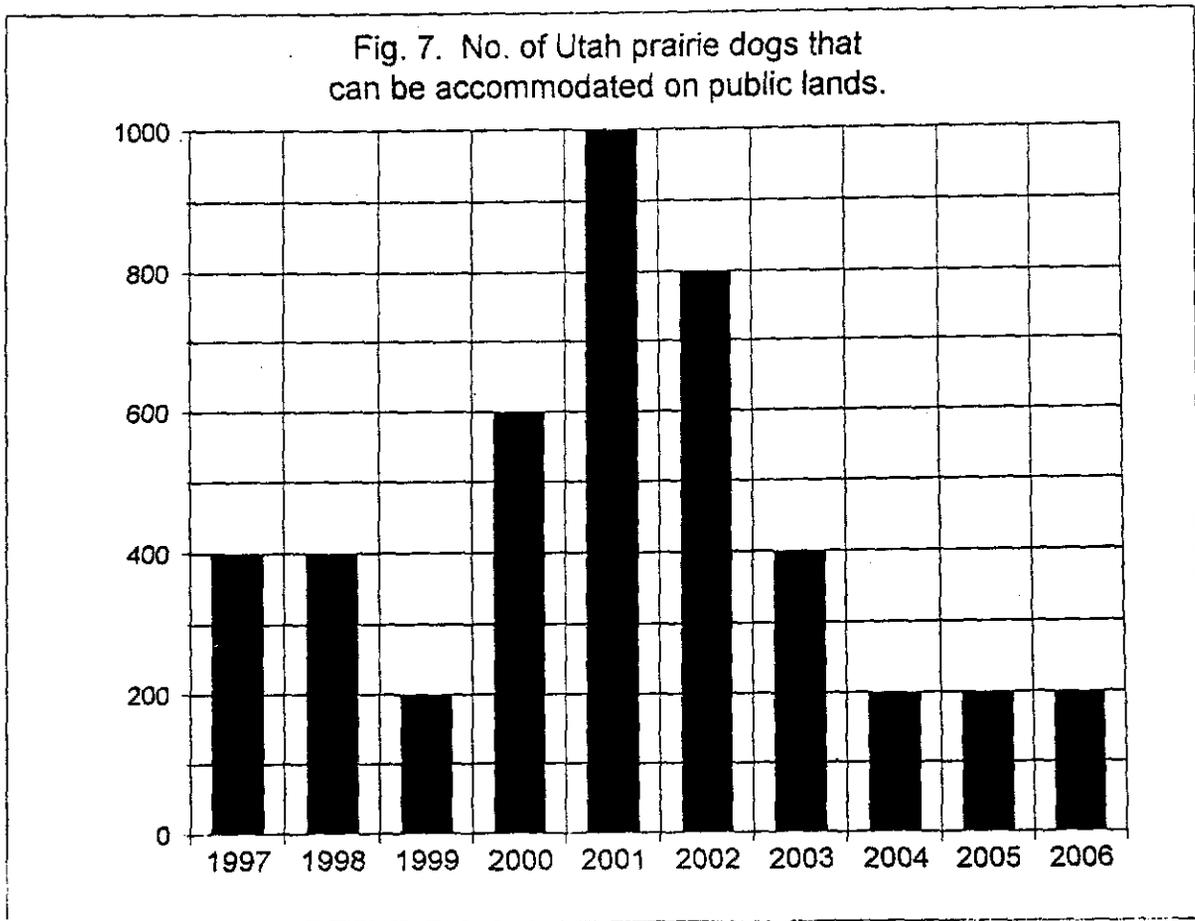
### 6.7 Utah Prairie Dogs Needed for Translocation Sites

The Adams Well Utah Prairie Dog Site Management Plan (Bonebrake and McDonald 1995) authorized translocating up to 400 Utah prairie dogs per year to that site for three consecutive years. Translocations began in 1996 and will continue through 1998. In order to implement the Interim Conservation Strategy, BLM has authorized several additional translocation sites on public land in the West Desert Recovery Area (BLM 1997). Each new translocation site will receive up to 200 Utah prairie dogs per year for three consecutive years. Currently, BLM plans to make available the DE translocation site in 1999, followed by the Tebbs Pond and Willow Spring research sites in 2000, the Coyote Pond and Horse Valley research sites in 2001, and The Neck translocation site in 2004. The actual timing for individual project implementation will depend upon funding, weather, livestock grazing schedules, and management needs. Therefore, if this schedule is followed, there will be a need for up to 400 Utah prairie dogs for translocation in 1998; up to 200 Utah prairie dogs in 1999; 600 in 2000; 1,000 in 2001; 800 in 2002; 400 in 2003; and 200 Utah prairie dogs per year in 2004, 2005, and 2006 (Fig. 7). These numbers and dates are contingent upon an effective date of implementation of the HCP of no later than May 1, 1998.

The total allowable number of translocations from all sources (see Sections 6.4-6.6) will not exceed the number that these translocation sites can accommodate from 1997 to 2006. No Utah prairie dogs will be translocated within one mile of an existing colony unless the spring counts for that colony have

been at zero for three consecutive years. Beyond 2006, recovery efforts will occur at specified sites and in specified quantities approved by the BLM and USFWS, and consistent with the revised recovery plan.

Figure 7. Graph showing anticipated level of need of Utah prairie dogs at approved translocation sites from 1997-2006.



## 6.8 Clearance Areas

Because Utah prairie dogs occur over a wide area but are patchily distributed, some construction may directly impact colonies of Utah prairie dogs, whereas other construction might have no impact on Utah prairie dogs or their habitat. Therefore, clearance areas have been delineated as those areas where surveys for Utah prairie dogs must be conducted prior to development. For purposes of this plan, and to quantify take, clearance areas have been defined as those areas where Utah prairie dogs or their sign have been mapped since 1976 (Utah prairie dog habitat), plus an additional area surrounding that which encompasses an estimate of home range, disturbance distance, and mapping error. Any new colonies that are discovered during annual monitoring will be added to the maps by UDWR and must undergo the same clearance procedures as previously mapped clearance areas. Updated maps will be provided at least annually to Iron County and local governments.

## 6.9 Building Permit Process

It is anticipated that most take will result from destruction of habitat by residential and commercial development. Before land can be developed, the owner/developer must first obtain a building permit from the local government jurisdiction in which he/she will be building. Therefore, applying for a building permit will be the action that triggers whether take will occur, and issuance of building permits will allow quantification of take. In the case of subdivisions, a clearance survey will be required for the entire subdivision plat. However, only that portion of the subdivision where ground will be disturbed during the calendar year will be required to be cleared of prairie dogs. Subsequent development in future years will require additional clearance surveys and, if necessary, removal of Utah prairie dogs before building permits will be issued. For example, in year one, only the infrastructure (road, sewers, etc.) might be developed in an approved subdivision, and individual lots put up for sale. That portion being developed must have the Utah prairie dogs removed from all areas where ground will be disturbed. During following years, clearance surveys and, if necessary, removal of Utah prairie dogs, must be done before additional infrastructure and building lots may be developed, as described in the building permit process below. This process allows for a landowner to provide assurances to individual purchasers that sufficient processes are in place to allow for construction. Every building permit office is responsible for contacting the UDWR on a daily basis to inform them of any new permit applications for sites that fall within Utah prairie dog clearance areas (Offices listed in Appendix V). If there is no activity to report, the offices do not need to contact the UDWR. Those same offices will report to the USFWS once a month to inform them of the lands that have had clearance surveys performed or are still waiting for the surveys to be conducted. Iron County will provide updated maps of Utah prairie dog clearance areas to the building permit offices annually.

### Non-Compliance and Waiver of Permit Protection

Some individuals may choose not to abide by the terms and provisions of the Iron County/UDWR HCP, and instead build within a Utah prairie dog clearance area without going through the building permit process. If so, that person will be required by the city or town issuing the building permit to sign a waiver before being issued a building permit (see Appendix IV). The USFWS Division of Law

Enforcement will be notified by the appropriate city within one business day following issuance of any such building permits, and will be provided a signed copy of the waiver. The signed waiver will serve as formal notification to the landowner from the USFWS that the land in question is Utah prairie dog habitat, and that disturbance of Utah prairie dogs or their habitat on the applicant's property may constitute a violation of the ESA. If the ground is disturbed before the landowner obtains an individual ESA Section 10(a)(1)(B) permit, the USFWS may pursue and prosecute that action as an ESA Section 9 violation.

If a city within Iron County chooses non-compliance with the county HCP, none of the citizens within that city may be granted the protection this HCP provides. The only option for landowners within that city is to develop their own HCP and obtain an individual Section 10 permit from the USFWS. If development of Utah prairie dog habitat occurs on private lands in cities that decline protection of this HCP and the landowner did not secure an individual Section 10 permit, the cities, as well as the landowner, may be subject to ESA Section 9 violations.

This HCP recognizes that not all activities resulting in the alteration/destruction of habitat require a building permit. Any ground disturbing activities which require specific approval must go through the following process if the landowner/developer wishes to be protected. In these instances, the local government granting approval (e.g., planning and zoning commission) will notify the applicant in writing of whether the area in consideration is Utah prairie dog habitat, and that person will be required to follow the same procedures as those applying for a building permit. Landowners not needing a building permit or special approval may be protected under this HCP if they choose (see Sec. 6.1).

The following procedures have been developed to minimize, monitor, and mitigate take associated with development:

**HCP Building Permit Process:**

<u>If this applies, then</u>	<u>Proceed to this number</u>
1. Applicant requests building permit, subdivision plat approval, or conditional use permit .....	2
2. Location of project is compared with Clearance Area maps .....	3
3a. None of building permit applicant's property is in Clearance Area .....	15
3b. All or some of applicant's property is in Clearance Area .....	4
4a. Project is modified to avoid Clearance Area .....	1
4b. Applicant chooses non-compliance with the county HCP and thus declines protection under the county permit .....	20
4c. A clearance survey must be conducted. Applicant pays for, but is not issued, a building permit until clearance survey is completed and dogs are moved if necessary <sup>1</sup> .....	5a

5a.	Qualified biologist (Appendix I) conducts clearance survey according to approved protocol (Appendix I). Qualified biologist prepares survey report that includes map of site, survey procedures, date of survey, weather conditions, number of prairie dogs, location of burrows, and presence of sign	6
5b.	Clearance survey must be repeated between months of April and September	6
6a.	Survey finding of Absent (no animals or sign)	15
6b.	Survey finding of Present (animals present)	8
6c.	Sign present (e.g., burrows), but no animals	7
6d.	Ground has been disturbed (see definition of ground disturbance)	18
7a.	If survey was conducted between April and September	15
7b.	If survey was not conducted between April and September	5b or 10b
8a.	Project is modified to avoid Clearance Area	1
8b.	UDWR is notified of survey results, and requested to remove animals	9
8c.	Project is canceled	
9a.	Translocation quota/take quota has already been achieved, or time of year is such that prairie dogs cannot be moved until following year	10
9b.	Project schedule is such that development must occur outside of the open window of dates for translocating prairie dogs	10b
9c.	Translocation of prairie dogs is scheduled with UDWR for current year	11
10a.	Applicant/Project is placed on UDWR translocation list for following year, Prairie dogs will be translocated on a first-come, first-served basis; begin process at item No. 11 the following year	11
10b.	Applicant pays mitigation fee of \$1,000/acre <sup>2</sup> before being issued a building permit, to the County's Utah prairie dog mitigation account to offset loss of habitat and animals. Acres of habitat and estimated number of Utah prairie dogs taken will be deducted from the current or following years' allowed take	15
11.	Building permit applicant flags construction site boundary where Utah prairie dogs are to be removed; UDWR removes UPD's within 30 days or until no more than one Utah prairie dog remains on parcels three acres or less in size, or two Utah prairie dogs remain on parcels greater than three acres	12
12.	If UDWR technicians remove prairie dogs, applicant reimburses UDWR for the removal. Cost is \$75.00 <sup>2</sup> per prairie dog, or \$100.00 <sup>2</sup> for one dog, whichever is more. If Iron County technicians remove prairie dogs, there will be no fee	13
13.	UDWR sends written notification to building permit office, notifying them of the number of prairie dogs removed, the number suspected to be still remaining on the site, and a map showing location that has been cleared	14
14.	Building permit office records take of animals removed and remaining, as well as acres of clearance area to be developed	15
15.	Building permit is issued; valid for one year <sup>3</sup>	16

16a.	Development occurs; Building permit office records actual amount of acreage within Clearance Area that is developed .....	17
16b.	Development does not begin by the following March 31 .....	1
17.	Annual take of habitat (acres) and take of animals is quantified; summary report provided to the USFWS	
18a.	Ground was disturbed in the course of normal agricultural practices, and not to intentionally eliminate sign of presence of Utah prairie dogs .....	19a
18b.	Ground was disturbed to eliminate sign of presence of Utah prairie dogs. USFWS will be notified* .....	19b
19a.	Applicant must wait at least 30 days before a survey can be completed .....	4
19b.	No further action until following year, then proceed to beginning of process .....	1
20.	Applicant signs waiver (Appendix IV) acknowledging that they understand the property in consideration is classified as Utah prairie dog habitat, and disturbance to that property may result in violation of the Endangered Species Act. Applicant may be issued a building permit.	

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<sup>1</sup>Building permit fee is not refundable, even if development does not occur.

<sup>2</sup>The UDWR will establish amount by way of signed letter from the Director. Subject to annual adjustment not to exceed annual inflation rate.

<sup>3</sup>If development is not completed within one year, Iron County has right to extend building permit per recommendations of building inspector.

<sup>4</sup>Incidental take permit does not provide exemption to Section 9 enforcement provisions.

## 6.10 Priority of Take and Translocations

Take of Utah prairie dog habitat and Utah prairie dogs will be prioritized by type (see Section 6.4), not to exceed the maximum allowed as listed in Tables 8 and 9. The priority of take and translocations will be as follows:

1. Approved Section 10(a) locations (permanent take)
2. Approved Section 7 (federal action) locations (permanent take)
3. Locations to be cleared in trade for conservation easements (permanent take)
4. Locations with identified safety concerns or sensitive areas
5. Maintenance activities on public recreation areas, roads, and other public facilities
6. Previously cleared areas
7. Agricultural complaint areas (non-permanent)

The first priority for translocation will be Utah prairie dogs from areas that have had a clearance survey conducted, have Utah prairie dogs present, and are waiting for the translocation season window to open in order to be served on a first-come, first-served basis. According to the most current accepted protocol, the season for new translocations begins 1 April for adult males and 1 July for juveniles and females, continuing until the maximum amount of take in each category is achieved (see Tables 8 and 9), up to the limit available at the translocation site, but continuing no later than

31 August. For supplemental transplants, the translocation season begins 1 July for all prairie dogs and continues no later than 31 August. The USFWS and Iron County Commission will prioritize the order of translocations from Section 10 permits. The Iron County Commission will have final authority to prioritize the order of translocations from permanent take areas cleared under this HCP.

While separate HCPs and incidental take permit applications may be submitted if an applicant chooses non-compliance with the county HCP, Section 10 permits are not guaranteed to be issued by the USFWS to these individuals. There will be significant time delays and economic losses in creating individual HCPs while greatly increasing the workload of the USFWS as they must review and respond to each individual Section 10 incidental take permit application. The taking of Utah prairie dogs is limited and therefore, those complying with the county HCP will have priority over those individuals seeking to create their own HCP.

### **6.11 Utah Prairie Dog Management Areas**

An integral component of this HCP is the creation and maintenance of Utah prairie dog Management Areas on public lands for the successful establishment of prairie dogs. In order to implement the Interim Conservation Strategy, the BLM has written five Utah prairie dog site management plans for areas in Iron County. These site specific plans outline the steps needed to manage the habitat in accordance with the vegetation guidelines outlined in the Interim Conservation Strategy. New translocation sites have been authorized for research into improving translocation success and habitat management techniques. After the research concludes, these sites will be managed as recovery complexes. The BLM approved six new translocation sites, five of which can also be used for intensive research purposes. Each site may receive up to 200 translocated Utah prairie dogs per year for three consecutive years. This will accommodate 3,600 translocated Utah prairie dogs on public lands during the next 8 to 10 years. Beyond this, recovery efforts and translocations will occur at additional sites and specified quantities as approved by the BLM and USFWS, and consistent with the revised recovery plan. Activities on Utah prairie dog management areas will be administered by the BLM. However, Iron County will assist with completing vegetation manipulations, as recommended in approved site management plans, in expectation of receiving mitigation credits as described in Table 10.

### **6.12 Measures to Minimize Take**

Take will be minimized by implementing the following:

By translocating Utah prairie dogs before ground disturbance and construction, providing there are sufficient sites approved by the USFWS and BLM.

By following a translocation protocol to maximize survival of translocated Utah prairie dogs.

By encouraging landowners to not develop or disturb habitat until such time as a building permit has been issued, consistent with the building permit process outlined in Section 6.9.

By educating and informing city and county employees, landowners, the general public, and those working in the building industry to recognize species of concern and encourage them to follow steps to minimize any taking.

By implementing measures to discourage unnecessary "take".

By providing seasonal assistance to UDWR for trapping, translocating, and monitoring Utah prairie dogs and habitat.

### Translocation of Utah Prairie Dogs

Trapping and translocating to a public land recovery site all individual Utah prairie dogs before construction activities begin at approved sites is the primary minimization measure that will be implemented in this HCP. All HCP building permit requirements listed in Section 6.9 are intended to identify potential impacts to resident Utah prairie dogs and set in place a mechanism whereby ground disturbance can be avoided until prairie dogs can be translocated under a biologically acceptable protocol (Appendix II). Efforts to remove all Utah prairie dogs from a clearance area will continue at any given parcel until no more than one Utah prairie dog remains on parcels three acres or less in size, or two Utah prairie dogs on parcels larger than three acres.

### Personnel to Assist UDWR

Iron County will provide UDWR with two technicians beginning with the Utah prairie dog spring survey in April, through the end of the translocation and retrapping season in September. These individuals must meet the approval of UDWR and must be of equal education and/or experience as those individuals generally hired by UDWR. The technicians must be compensated at a comparable rate to current UDWR technicians of equal education and/or experience. These individuals will be supervised by the UDWR who will also provide them with transportation and all necessary equipment.

### City and County Employee Information and Education

By conducting an annual workshop on the natural history of Utah prairie dogs along with teaching the fundamentals of this HCP to pertinent County and City employees (for the cities along the I-15 corridor) who work in or with the building industry (e.g., inspectors, planners, economic developers, etc.), who in turn can help educate those with whom they work, the overall level of awareness and support for the Utah prairie dog recovery program and Iron County HCP should vastly improve. This workshop will be sponsored by the Iron County Commission who in turn would require the attendance of the above City and County employees. Iron County will request representatives from UDWR, USFWS, and the BLM to assist in the instruction.

### Discouraging Unnecessary Take

In an attempt to make this HCP as “user friendly” as possible for all interested parties, while also taking all steps necessary to ensure that take is adequately minimized, monitored, and mitigated, there are requirements of developers which result in incentives against take. These requirements are intended to allow those persons interested in development the ability to pursue that development and be protected from any legal infractions; while at the same time discourage persons less interested in pursuing development from seeking the removal of resident Utah prairie dogs and using up available translocation site space. Property owners intent on developing, who are interested in being covered under the directives of this HCP, must be prepared to pay for and/or pursue in the following order: 1) the building permit process (Sec. 6.9), 2) a building permit, and 3) penalties for not beginning development within the one year the building permit is issued.

Because the HCP does not allow for unlimited take and because there is a limited number of Utah prairie dogs that can be translocated, monetary penalties will be applied to those landowners who obtain a building permit for the sole purpose of removing Utah prairie dogs without the intention of developing. Those found to be fraudulently applying for and/or obtaining a building permit will be responsible for, but not restricted to, the following penalties: 1) the cost of the clearance survey(s) conducted on the property, and 2) the cost of removal for each Utah prairie dog (See Sec. 6.14). If it is deemed by any of the signatory parties that construction did not begin within the one year that the building permit was issued, there may be an investigation to determine if landowners are in violation of the ESA. The developer is responsible for contacting the building permit office (Appendix V) if development will not begin in one year’s time.

### **6.13 Measures to Mitigate Take**

A requirement of the habitat conservation planning process is that measures to mitigate take be implemented. In accordance with the Utah Prairie Dog Recovery Plan and Interim Conservation Strategy, recovery efforts are centered on successful establishment of Utah prairie dogs on public lands. Therefore, most mitigation actions will be to work towards that goal. Mitigation actions have been divided into seven categories.

- 1) Habitat Maintenance: Maintaining and/or enhancing existing habitat
- 2) Habitat Development: Creating new habitat
- 3) Habitat Protection: Protection of existing habitat through, but not limited to habitat acquisition and conservation easements
- 4) Research: Research into biotic and abiotic variables that affect establishment and survival of translocated Utah prairie dogs.

- 5) Information and Education: Conducting public involvement and education programs to garner public awareness and support for the Utah prairie dog recovery program
- 6) Seasonal Personnel to Provide Assistance: Providing funding and/or personnel to assist with biological monitoring and research
- 7) Other: Providing allotment mitigation

Mitigation measures have been divided into seven categories, and mitigation credits have been valued by the importance of each mitigation action towards recovery objectives (Table 10). For example, priority one actions would receive more mitigation credits than priority three actions because priority one actions are felt to be more important towards recovery of the species. Mitigation measures must be implemented, and appropriate credit accrued, before incidental take can occur, up to the maximum allowed incidental take per calendar year as described in Sections 6.5-6.7. Provided that this HCP is approved by May 1998, all mitigation measures undertaken beginning January 1998 will count toward mitigation credits. Mitigation actions not included in Table 10 will be evaluated and the amount of credit given will be decided by consensus of the Implementation Committee. Mitigation credits are cumulative throughout the life of this HCP.

Table 10. Mitigation actions that can be implemented to release clearance area acres for permanent take. Take cannot exceed that level allowed in Tables 8 and 9 (Sections 6.5-6.6).

<u>Priority</u>	<u>Mitigation Action</u>	<u>Minimum Mitigation Unit</u>	<u>Value/ Unit<sup>1</sup></u>	<u>Acreage Released Per Unit (Mitigation Credits)<sup>1</sup></u>
<b>HABITAT MAINTENANCE</b>				
1	Prescribed Burns	40 acres	\$ 1,000	8
1	Brush Beating	40 acres	\$ 1,600	13
1	Disking	40 acres	\$ 1,600	13
1	Inter-seeding Re-seeding	20 acres	\$ 900	7
1	Temporary Fencing	1 mile	\$ 3,100	25
<b>DEVELOPMENT</b>				
1	Prescribed Burns	40 acres	\$ 1,000	8
1	Brush Beating	40 acres	\$ 1,600	13
1	Disking	40 acres	\$ 1,600	13

Table 10 cont.

Priority	Mitigation Action	Minimum Mitigation Unit	Value/Unit <sup>1</sup>	Acreage Released Per Unit (Mitigation Credits) <sup>1</sup>
<b>DEVELOPMENT (cont.)</b>				
1	Seeding	40 acres	\$ 1,800	15
1	Fencing	1 mile	\$ 3,100	25
<b>HABITAT PROTECTION</b>				
1	Habitat Acquisition	40 acres	Market Value	4
1	Conservation Easements	10 acres	Market Value	1
<b>RESEARCH</b>				
2	Data collection & analysis	2 sites	\$40,000	160
<b>INFORMATION AND EDUCATION</b>				
1	Public Involvement Training	By Expenditure	\$ 2,000	16
1	Watchable Wildlife Site	By Expenditure	\$ 2,000	16
2	Newsletter	By Expenditure	\$ 1,000	4
2	Informational Signing	By Expenditure	\$ 1,000	4
2	Tourist Information	By Expenditure	\$ 1,000	4
3	Informational Brochures	By Expenditure	\$ 2,000	5
<b>SEASONAL PERSONNEL TO PROVIDE ASSISTANCE</b>				
2	Provide two seasonal personnel to assist UDWR	2 persons/ 6 months	\$15,000	60
<b>OTHER</b>				
3	Allotment Mitigation <sup>2</sup>	40 acres	\$10,000	26

<sup>1</sup>Subject to actual expenses incurred and may change as decided by the Implementation Committee.

<sup>2</sup>Actions taken on a public land grazing allotment to offset an impact anticipated to occur to livestock grazing as a result of implementing habitat improvement for Utah prairie dogs, or the release of prairie dogs at research/translocation sites.

A process will be developed within one year of permit issue by the UDWR and the BLM for prioritizing habitat to be acquired and actually acquiring the habitat. For example, private land adjacent to public recovery sites and existing public land colonies will be given higher priority than parcels surrounded by private property. Priority areas will be reviewed by the Implementation Committee at bi-annual meetings, and decisions regarding acquisition will be made by unanimous consensus of the Implementation Committee.

To show good faith and begin implementation of this HCP, Iron County has committed to implement the following mitigation actions in return for mitigation credits as outlined in Table 10.

### Habitat Protection

Habitat protection through conservation easements is not an alternative to the Iron County HCP, but is expected to be used in concert. If coordinated properly, conservation easements, in conjunction with the HCP, could further recovery of the Utah prairie dog. Each parcel considered for easements will have to be examined individually to determine if it would be valuable to set aside as an easement. The following requirements must be met before land is considered for a conservation easement.

1. The land in question must be at least 10 acres in size and must compliment existing public land colonies or translocation sites **OR** be large enough (minimum 200 acres) to stand alone and support a viable colony.
2. The land will be placed under easement status in perpetuity (subject to review).
3. Conservation easements must allow for vegetation treatments if deemed necessary.
4. The easement must be issued jointly to Iron County and UDWR.

Land placed under easements may be used in trade for clearing prairie dogs from other areas. For every 10 acres of land established as an easement, one acre of clearance will be granted (Table 10). Acreage protected through establishment of conservation easements on non-federal property will count towards the protected land total acres (Table 9).

Utah prairie dogs will be afforded additional protection through conservation easements and therefore, the permanent take limit may be increased. Up to an additional 10% of the total number of prairie dogs on public lands (based on Table 9) may be taken as permanent take if conservation easements are in place. This additional amount of take will come only from lands that are to be cleared in trade for conservation easements. If the additional quantity of permanent take is not reached, prairie dogs cannot be taken from other approved Section 10(a) areas to meet the limit. The increase in permanent take will be offset by reducing the limit for non-permanent take.

Special meetings of the Implementation Committee may need to be called to discuss parcels being considered for conservation easements. Decisions made by the committee must be by consensus. Status of easements will be reviewed at bi-annual coordination meetings.

### Information and Education

An important component of successfully implementing this HCP will be to garner public support for the HCP and associated recovery efforts, and ensure the public is aware of requirements of the HCP. Towards that end, a workshop to inform interested publics on the parameters of this HCP, and how it can work for them, will be sponsored and publicized by the Iron County Commission each year prior to the translocation season. Iron County also will assist in a cooperative signing effort with the BLM at management sites to inform and educate visitors on the status and recovery of the Utah prairie dog.

### Management and Research Site Preparation

Iron County will ensure that all necessary vegetative management prescriptions, reseeds, and necessary fencing to prepare suitable translocation sites for Utah prairie dogs are performed. Iron County will assume the responsibility and share in the expense to prepare and maintain approved translocation sites on public lands within Iron County. This would include, if required and approved, clearing the land, reseeding, and fencing for only the translocation site--not to otherwise improve the value of adjacent land. This commitment does not include modifications of sites that go beyond natural habitat (i.e., irrigated areas). The County will expect the technical assistance of the BLM, UDWR, and USFWS in this process. Assistance may include expense, labor, equipment, and materials. Funds or services generated or appropriated from other entities will also be utilized for this purpose.

### Assisting in Research Portion of Conservation Strategy

Iron County will take an active role in pursuing financial support for the USFWS research program as outlined in the Conservation Strategy. By assisting the USFWS in the solicitation of funds from any and all governmental agencies involved, as well as conservation groups and/or private endowments, Iron County aims to ensure that an adequate level of research and monitoring takes place on translocation sites to improve translocation techniques.

## **6.14 Funding to Implement Mitigation and Minimization Measures**

Funding to implement minimization, monitoring, and mitigation measures outlined in this HCP is expected to come from a variety of sources including annual budget allocations by management agencies (UDWR, BLM, USFWS), budget allocations by Iron County, mitigation funds paid by developers (see below), legislative appropriations, grants, donations, and other as yet unidentified sources. The UDWR, BLM, and USFWS have all committed to assist with implementation of this HCP as their annual funding appropriations allow, and to seek necessary funding in annual budget requests (see Appendices III A - D). It is understood by all four parties that they are not required to

commit more funds than those shown in Appendix VI until all parties have fulfilled their cost share obligation. Any federal funding is subject to requirements of the Anti-Deficiency Act and the availability of appropriated funds. Iron County will ensure that approved translocation sites on public lands within Iron County are prepared and maintained using county equipment, personnel, and funds. Iron County expects the assistance of BLM, UDWR, and USFWS in also providing funds, labor, equipment, and materials. Additional sources of funding that will be available are listed below. Failure to meet funding obligations (mitigation measures; Table 10) after the permit is issued shall be grounds for USFWS suspension or revocation of this permit.

#### Cost to Translocate Utah Prairie Dogs From Permanent Take Areas

If Iron County technicians trap and translocate Utah prairie dogs from permanent take areas, there will be no cost to landowners or developers. However, if UDWR technicians must trap and translocate Utah prairie dogs from permanent take areas, due to high demand or other unforeseen circumstances, landowners or developers seeking a building permit will assume full responsibility of compensating the UDWR for the trapping, transporting, and releasing of Utah prairie dogs from the parcel to be developed. The UDWR shall receive monetary compensation from the building permit applicant for an amount equal to the actual costs for trapping and relocating Utah prairie dogs from the parcel in question. This amount will be based on the actual number of Utah prairie dogs translocated. The UDWR shall establish by way of a letter signed by the Director, on a calendar year basis, the exact amount to be compensated for each Utah prairie dog translocated. That amount in 1996 was \$75.00. The UDWR and/or county technicians shall remove sufficient Utah prairie dogs to ensure a tolerable level of take as outlined in Section 6.12. The landowner or developer is subject to the time frames established in the translocation protocol (Appendix II) and the building permit process (Section 6.9). There will be no charge for translocating prairie dogs from non-permanent take areas.

#### Cost to Conduct Building Permit/Property Clearances

All those lands which fall within the clearance areas of Iron County require a clearance survey (Appendix I) before a building permit will be issued. These inspections are to be conducted by qualified biologists or approved biological technicians that meet the surveyor qualifications outlined in Appendix I. The "Utah Prairie Dog Clearance Area Survey Protocol" establishes the techniques and associated requirements of these inspections. If Iron County technicians conduct the clearance surveys, there will be no cost. There will be a charge if a developer seeks a UDWR biologist to conduct the surveys or if a UDWR biologist must conduct the surveys due to unforeseen circumstances. Cost for these surveys will be calculated based on the time required to survey and inspect per any given acre. Thus, this cost will be determined by the size of the parcel in question.

#### Cost to Develop Without Translocating Utah Prairie Dogs

Developers are encouraged to plan ahead and incorporate prairie dog removal into their schedule so take can be minimized. Still, situations may arise where a developer cannot wait until the time period when translocations occur (e.g., winter development). In these instances, developers must pay a

mitigation fee of \$1,000 per acre of clearance area destroyed. The mitigation fee will be appropriate for the size of the lot in question. For example, \$500 will be charged on a 0.5 acre lot and \$250 for a 0.25 acre lot. Those funds will be deposited into Iron County's Mitigation Account and used to implement mitigation actions consistent with the Utah Prairie Dog Recovery Plan and Interim Conservation Strategy. The Implementation Committee will oversee expenditures from the account. Any changes in mitigation fee(s) will be addressed and made by consensus of the Implementation Committee. Actual acreage of habitat taken, and an estimate of Utah prairie dogs taken, will count against the annual allowed permanent take. Estimates of Utah prairie dogs taken will be derived by using the highest spring count of adults during the past five years and projected productivity, or a projected density of 0.052 adult Utah prairie dogs per acre and projected productivity, whichever is greater. Projected productivity will be based on a 1:2 adult male:adult female ratio, 97% of adult females breeding, and 4.0 young per breeding adult female.

**EXAMPLE:** Highest spring count of past five years is seven adult Utah prairie dogs on 100 acres.  $7 \times 67\%$  (amount of adult females)  $\times 97\%$  (amount of breeding females)  $\times 4$  (young per breeding adult female) = 18 (juveniles) + 7 (adults) = 25 total Utah prairie dogs.

**OR**

$100$  (acres)  $\times 0.052 = 5$  (adult Utah prairie dogs);  $5 \times 67\% \times 97\% \times 4 = 13$  (juveniles) + 5 (adults) = 18 total Utah prairie dogs.

In this example, the highest spring count from the last five years would be used to determine take since it resulted in the higher number of Utah prairie dogs in the clearance area.

#### Legislative Appropriation

In December 1997, Congress approved a one time appropriation of \$560,000 to be used for implementing the Utah Prairie Dog Recovery Plan and Conservation Strategy. This amount was needed to match funds already being provided by Iron County, UDWR, BLM, and USFWS (Appendix VI). This money will be held in an account managed by the USFWS. Funding from this account may be used over a five year period and will be dispensed at the discretion of the Implementation Committee and the Utah Prairie Dog Recovery Implementation Team. Cooperative agreements between the USFWS and other agencies will be the primary manner in which funds are dispensed.

#### Services Provided by Other Entities

All revenue collected from previous and future Section 10 permits issued in Iron County, other than this county-wide permit, involving the collection of mitigation funds, will be used solely for implementing the Utah Prairie Dog Recovery Plan, Interim Conservation Strategy, and other conservation measures for Utah prairie dogs in the West Desert Recovery Area. These funds will be deposited in the U. S. Fish and Wildlife Service's Utah prairie dog account with the National Fish and

Wildlife Foundation. The funds are dispensed, per recommendations of the Implementation Committee and the Utah Prairie Dog Recovery Implementation Team, by the Utah Field Office Supervisor.

### **6.15 Biological Monitoring**

Biological monitoring that will occur includes continuing annual spring counts of adults at all known colonies, documenting new sites, intensive monitoring of Utah prairie dogs at new translocation sites for at least five years after the site is established, and vegetation monitoring at translocation sites. This monitoring is consistent with monitoring recommended in the Utah Prairie Dog Recovery Plan (USFWS 1991a), as well as the Interim Conservation Strategy (UPDRIT 1997).

Spring counts will be conducted between March and May at all known colonies in the West Desert Recovery Area according to established protocol. Counts will be supervised by UDWR, and conducted by UDWR, BLM, and Iron County technicians. All count data will be entered into a computerized database maintained by UDWR, summarized, and included in an annual report by 15 February of the following year. Newly discovered colonies will be mapped on USGS 1:24,000, 7.5 minute quadrangle maps using a GPS unit, and will be digitized by the BLM each year so that updated, electronic maps are available as well.

Utah prairie dogs at new translocation sites will be intensively monitored for five years after a new site is established and animals are translocated there. Intensive monitoring will include weekly counts between 1 August and 31 October to determine number remaining, dispersal distance, presence of predation, etc. Up to 40 Utah prairie dogs will be recaptured at each site in September to determine weight gain, dispersal distance, and overall condition. After the first five years monitoring will consist of annual spring counts and site assessment. Monitoring data will be summarized and reported in an annual report by 15 February of the following year. This will be accomplished by UDWR personnel.

Intensive vegetation monitoring at new sites will occur between April and October for three to five years after the first translocation. Vegetation monitoring will also occur at already established sites at least once every three to five years. Monitoring will be directed at determining site compliance with the recommended vegetation guidelines for Utah prairie dog habitat. Vegetation baseline data will be collected before translocations to new sites. Monitoring will measure all or most of the following attributes: canopy and basal cover, site composition, average vertical height of plants, species composition and trend over time, utilization, and annual productivity at each site. Minimal monitoring will occur at non-research translocation sites upon mutual agreement between BLM and USFWS. The current accepted method is to determine the percent ground cover by species using the step-point method. Annual productivity will be conducted at a representative site and will be estimated by clipping and weighing vegetation inside of livestock-proof utilization cages. A description of methods and sample data sheets can be found in BLM's Utah Prairie Dog Site Management Plans. Data will be summarized each year and reported in an annual report by 15 February of each year. If monitoring shows that a public land site is not providing at least 200 to 250 acres per colony of suitable habitat, as defined in the recommended vegetation guidelines for Utah

prairie dog habitat, or if the site fails to meet vegetation criteria, then vegetation enhancement will be proposed to bring the site into compliance. The BLM is the lead agency for this work (monitoring and vegetation enhancement).

#### **6.16 Administrative Monitoring**

Administrative monitoring will consist of tracking the number of building permit applicants that require clearance surveys, number of clearance surveys that have been completed, survey results, acreage that has been approved for development, acreage that was developed, number of Utah prairie dogs translocated, and number of Utah prairie dogs that could not be trapped and were considered taken. This will be recorded by each local government that issues building permits, and will be compiled by Iron County and summarized in an annual report by 15 February of the following year. Iron County will also be responsible for tracking mitigation measures implemented that allow take as provided for in Section 6.13. Those measures also will be summarized and included in Iron County's annual report.

#### Cumulative Reports on Take

Impacts caused by the proposed action will be monitored by periodic review of impacted habitat within Iron County. Impacted acreage will be calculated over time to assess rate of habitat loss and gain resulting from the proposed action. Furthermore, the habitat impacted will be categorized as 1) currently occupied habitat, 2) previously occupied habitat, and 3) occupied areas previously unknown. This data will largely come from clearance survey report forms, as well as from UDWR translocation reports. In completing the survey form, the qualified biologist must mark on the form whether prairie dogs currently occupy the area, and if so, they must estimate how extensive their active colony is on the property. This data will also be compiled by Iron County and summarized in an annual report by 15 February of the following year.

#### **6.17 Reports and Coordination**

#### Coordination Meetings

An Implementation Committee (See Sec. 6.21) will be appointed to implement the HCP and ensure communication remains open. The Iron County Commission and UDWR will convene a meeting of the Implementation Committee on the last Thursday of February each year, or otherwise agreed to by committee members, to review the previous year's annual reports; calculate previous year's mitigation credits; review progress towards implementing the HCP; develop annual work plans for the upcoming year; and to determine how funds will be allocated. To be discussed at this meeting will be a review of accrued mitigation credits, planned mitigation efforts, expected take requests, take that will be allowed from all sources based on mitigation credits and recovery progress, resource needs, status of conservation easements, and other items to be determined. Decisions by this committee will be by consensus.

Another meeting of the Implementation Committee will be convened by the Iron County Commission and UDWR on the second Thursday of September each year, or otherwise agreed to by committee members, to review work accomplishments, discuss compliance with, and problems with the plan; resolve questions or conflicts that may have arisen; and ensure the required annual reporting elements are being completed.

Additional meetings may be called at any time by any of the cooperators to discuss problems with implementation of the HCP, recovery progress, or to resolve disputes that arise.

### Annual Reporting

Annual reporting requirements will include an annual and cumulative summary of biological monitoring and administrative monitoring data. UDWR will compile biological data including results of annual spring counts, trapping and translocating efforts, control permits issued, intensive monitoring of Utah prairie dogs at translocation sites, and vegetation monitoring at new and established translocation sites (with assistance from BLM and research contractor). Translocation data that will be reported includes number, age, and gender of Utah prairie dogs trapped from individually identified colonies, number remaining that could not be trapped (in cases of permanent take), and date of capture and release. Any agency with data that must be included in this report, must submit it to UDWR by 31 January of the following year. This report will be completed and submitted to the USFWS by 15 February.

Iron County will compile administrative monitoring data including a summary of the number of building permit applications, number of building permit applicants requiring clearance surveys, clearance survey results, habitat acreage approved for development, habitat acreage that was developed, and number of acres and Utah prairie dogs that were taken. Iron County, with the assistance of UDWR, BLM, and USFWS will also provide in the report a summary of mitigation measures implemented during the calendar year. Any agency with data that must be included in this report, must submit it to Iron County by 31 January of the following year. This report, along with the biological report provided by UDWR, will be submitted to the USFWS by 15 February, and will be reviewed at the February coordination meeting.

### **6.18 Alternatives in Case of Translocation Failure**

It is anticipated that with more intensive management of translocation sites and monitoring of vegetation conditions and Utah prairie dogs at translocation sites, translocation success should increase. However, based on past poor translocation results, this is not guaranteed. Therefore, additional measures will be implemented should it be determined that translocations are not achieving desired recovery goals. Determination of translocation failure is quantifiable, and is population parameter-based (see glossary). Should translocation failure occur, then the following measures, and/or others identified by the committee, will be necessary to allow continued permanent take. Those measures will be awarded the same mitigation value as described in Table 10, and include:

1. Modification of translocation site to better accommodate Utah prairie dogs (e.g., burning, seeding),
2. Approval of additional transplants when human predation is determined to be a factor in translocation failure,
3. Purchase of habitat,
4. Reimbursement to landowners for harboring and propagating Utah prairie dogs (i.e., conservation easement), and
5. Set aside a portion of habitat in exchange for the ability to develop additional habitat.

Implementation of these items must be agreed to by consensus of the cooperators. The decision will include site location, minimum parcel size, and importance towards recovery. A process will be developed by UDWR and BLM for prioritizing habitat to be acquired and actually acquiring the habitat. Priority areas will be reviewed at the bi-annual meetings, and decisions regarding acquisition will be made by the Implementation Committee. Allowable take will be based on number of protected public land acres, proximity of those acres to other protected habitat, and number of Utah prairie dogs occupying those acres.

#### **6.19 Unforeseen Circumstances**

Iron County and UDWR subscribe to the "unforeseen circumstance" assurances provided in the U.S. Fish and Wildlife Service's "No Surprises" policy. Under the "No Surprises" provision, any changes in the Endangered Species Act should not require additional mitigation or other requirements--provided this is a fully and properly functioning HCP.

It is recognized by Iron County and UDWR that as research into improving habitat management for prairie dogs is completed, the Utah Prairie Dog Recovery Plan will be revised, and therefore some portions of this HCP may also require revision. These changed circumstances are anticipated, and are expected to result in some revisions to this HCP for Utah prairie dogs in Iron County.

This HCP will be reviewed semi-annually, as noted in Section 6.17. Thus, any changes or unforeseen circumstances which arise during the course of this HCP will be addressed and necessary amendments formulated to accommodate those circumstances through this review process.

#### **6.20 Plan Amendment Procedures**

Amendments to this HCP are expected during the life of the plan, and are expected to fall into categories of minor and major. Minor amendments may be made at the discretion of, and by unanimous vote of the Implementation Committee. Major amendments to this HCP can be proposed to the USFWS by any signatory to the HCP or by the Utah Prairie Dog Recovery Implementation

Team (Technical Team). Proposed amendments must contain sufficient, justifiable reasoning for amending the plan. Proposed major amendments will be reviewed by the Implementation Committee, and comments regarding the proposed amendment will be provided to the USFWS. The USFWS will have ultimate authority to approve, modify, or reject the proposed amendment. If denied, an administrative or judicial review of the USFWS decision may be made. No amendments will be allowed that have the potential to further adversely affect any threatened or endangered species.

## **6.21 Procedures to Resolve Disputes**

### Implementation Committee

Once the HCP is finalized and approved, an Implementation Committee consisting of one member each from the Iron County Commission, UDWR, BLM, and USFWS will be convened. The appointees will be decided upon by the agency they represent. The first task of this committee will be to develop operating rules, a decision-making process, and process for implementing responsibilities. This committee will then meet at least bi-annually, as described in Section 6.17 above, to review progress and ensure all elements of this HCP are being implemented.

### Dispute Resolution

If disputes arise between any members of the Implementation Committee regarding interpretation or implementation of this HCP, they will be resolved in a timely and equitable manner according to the procedures listed below.

Problems, concerns, and interpretation of the HCP will be discussed at bi-annual work meetings convened by Iron County and UDWR and attended by the Implementation Committee. It is hoped that most problems and concerns can be resolved at this level. Additional meetings may be convened at any time by any of the signatories of the HCP if disputes regarding implementation of the HCP arise.

An “unresolved dispute” will be deemed to exist upon written documentation provided by any party to the other signatory parties. For a 60-(calendar) day period following documentation of an “unresolved dispute,” the parties agree to seek facilitated resolution of the dispute. The facilitator shall be mutually agreed upon by the signatory parties. No resolutions will be allowed that have the potential to further adversely affect any threatened or endangered species. At the end of the 60-day period, if there is no resolution of the dispute, all parties agree that all terms and conditions, and provisions of the permit are suspended until resolution is achieved.

### Permit Suspension, Revocation, or Termination

If determined by the USFWS that the obligations of the Section 10(a)(1)(B) incidental take permit are not being met, that unauthorized taking of Utah prairie dogs by the cooperators is occurring, that factors warranting suspension of the permit are not being remedied, or that permit violations are adversely affecting the Utah prairie dog in Iron County, and if remedial actions are not immediately

implemented to alleviate such violations, the Section 10(a)(1)(B) incidental take permit may be revoked by the USFWS. Revocation shall not occur without the USFWS first 1) requesting the county and UDWR to take appropriate remedial action, and 2) providing to the Iron County Commission and UDWR notice, in writing, of facts or conduct which warrant revocation, and a reasonable opportunity to demonstrate compliance. All parties shall fully cooperate to expeditiously resolve any conflicts or actions warranting revocation of the permit.

## **6.22 Summary**

Below is a summary of ongoing and planned minimization, mitigation, monitoring, and recovery efforts for Utah prairie dogs in Iron County (Fig. 8, Table 11).

Figure 8

<b>MINIMIZATION, MITIGATION, AND MONITORING PROVISIONS CONTAINED IN THE            HABITAT CONSERVATION PLAN FOR UTAH PRAIRIE DOGS IN IRON COUNTY, UTAH</b>		
Minimization	Mitigation	Monitoring
Encouraging no development outside of translocation window	Habitat maintenance	Annual spring count of all colonies
Translocating UPDs to public lands following established protocol	Habitat development	Intensive monitoring of translocated UPDs
Discouraging unnecessary take	Habitat acquisition	Recapt. & assessment of translocated UPDs
Education of pertinent personnel	Conservation easements	Monitoring of vegetation at translocation sites
Education of landowners and developers	Research site preparation	Monitoring of vegetation at established sites
Providing seasonal personnel to UDWR to assist with minimization and monitoring efforts	Data collection & analysis	Tracking clearance permit results
	Public involvement training	Tracking building permits in UPD habitat
	Newsletter	Tracking acreage taken
	Informational signing	Tracking Utah prairie dogs taken
	Tourist information	Tracking mitigation measures and accrued mitigation credit

**Table 11. Ongoing and Planned Recovery Efforts for the Utah Prairie Dog in Iron County**

Recovery Item	Lead Agency <sup>1</sup>	Frequency	Start Date	Stop Date	Comments
<b>MONITORING</b>					
Conduct annual spring count of Utah prairie dogs throughout the West Desert Recovery Area	DWR	Annually	1976	ongoing	Iron County will provide two technicians to assist with this beginning in 1998
Monitor Utah prairie dogs and vegetation at Adams Well Translocation Site by measuring plant species cover, monthly productivity, vegetation height, and utilization	DWR BLM	Annually	1995	2000	Being done in accordance to Adams Well Management Plan (Bonebrake and McDonald 1994)
Monitor vegetation at public land recovery sites, per approved management plans, and compare with recommended vegetation guidelines for Utah prairie dog habitat.	BLM	Annually for the first 3 to 5 years at new sites	1996	ongoing	At least once every three to five years after a site has been established.
Maintain record of number of public acres occupied by prairie dogs.	BLM	Annually	1995	ongoing	
Update and digitize Utah prairie dog maps and distribute to Iron County.	DWR BLM	Annually	1996	ongoing	
Update and digitize Utah prairie dog colonies on plat maps and distribute to building permit offices.	ICO	Annually	1998	ongoing	
<b>TRAP/TRANSLOCATION</b>					
Trap Utah prairie dogs from approved Section 7 and 10 sites, and relocate them to approved public land recovery sites according to approved protocol	DWR	Annually	1972	ongoing	Iron County will provide two technicians to assist with this beginning in 1998.
Trap Utah prairie dogs from agricultural damage areas, maintenance sites, and previously cleared sites (4d sites), and relocate them to approved public land recovery sites according to approved protocol	DWR	Annually	1984	ongoing	UPD's will be translocated to Adams Well from 1996-1998; will be translocated to approved BLM sites from 1999-2006. After 2006, will be translocated to additional public land sites, if available.
Prepare habitat at translocation sites. May include burning, plowing, seeding, livestock management, etc.	BLM ICO	As needed	1998	ongoing	BLM will approve actions and authorize ICO to implement these actions
Prepare translocation sites according to established protocol. Includes drilling holes, constructing and securing holding cages, providing food and water	DWR	Annually	1984	ongoing	Iron County will provide two technicians to assist with this.
Monitor translocated prairie dogs; regularly provide food and water	DWR	Annually	1996	ongoing	
Conduct predator control at translocation sites until prairie dogs become established.	DWR WLS	Annually	1984	ongoing	

Activity Item	Lead Agency <sup>1</sup>	Frequency	Start Date	Stop Date	Comments
<b>RESEARCH</b>					
Prepare four research sites consisting of four, 40-acre plots as recommended in the Conservation Strategy Archeological clearances Fencing Vegetation Treatments Seed Seed Drilling	BLM	One time	1998	1999	May be funded by federal appropriation to USFWS
Collect data about plant species composition and percent cover in each of five treatments at four separate research sites, as prescribed in the Conservation Strategy	Contractor	Annually	2000	2005	Research would be conducted by contractor selected by the committee through competitive RFP process
Monitor prairie dogs translocated to research sites. Includes conducting weekly counts to determine survival, dispersal, etc. Also includes determining productivity and number of young per treatment area	Contractor	Annually	2000	2005	Research would be conducted by contractor selected by the committee through competitive RFP process
Retrap translocated prairie dogs once each September at each research site to determine dispersal distance, weight gain, and overall condition in each of the treatments	DWR ICO	Annually	1996	2005	Adams Well from 1996-1998 New Sites from 1999-2006
Manage research plots to simulate different grazing systems. May include using livestock or mowing to a desired utilization level	BLM	Annually	2000	2005	Will be done as part of research protocol
Monitor habitat use and Utah prairie dogs that establish outside of the research plots	DWR	Annually	1995	ongoing	Adams Well Site, Research Sites, Other Recovery Area Sites
Compile data, summarize, and prepare final report with recommendations for management of rangeland habitat for Utah prairie dogs	Contractor	One time	2000	2006	Will be completed by contractor selected by the committee to carry out research prescribed in Conservation Strategy.
<b>MAINTENANCE &amp; ENHANCEMENT OF PUBLIC LAND SITES</b>					
Enhance at least 250 acres within each of five management areas where Utah prairie dogs currently exist.	BLM	As needed	1998	2007	The five management areas are Monument Peak, Black Mountain, Buckskin, Buckhorn Flat, and Horse Hollow.
Implement management actions to achieve management plan recommendations. May include burning, plowing, seeding, livestock management, etc.	BLM ICO	As needed	1998	ongoing	BLM will approve actions and authorize ICO to implement these actions
Monitor effects of vegetation treatments and compare with recommended vegetation guidelines	BLM	As needed	1998	ongoing	

Recovery Item	Lead Agency <sup>1</sup>	Frequency	Start Date	Stop Date	Comments
<b>MAINTENANCE &amp; ENHANCEMENT OF PUBLIC LAND SITES (cont.)</b>					
Identify, prepare, and maintain additional public land sites following research result recommendations and consistent with revised recovery plan	BLM	As needed	2005	ongoing	
Develop process for prioritizing habitat to be acquired and manage acquisitions	BLM DWR	As needed	1998	ongoing	
<b>INFORMATION AND EDUCATION</b>					
Prepare and send quarterly newsletter informing interested publics of activities associated with recovery of the Utah prairie dog	BLM	Quarterly	1996	ongoing	
Develop and implement public involvement process to garner local support and understanding of Utah prairie dog recovery efforts	ICO	As needed	1996		
Develop notebook series species account for the Utah prairie dog	DWR	One time	1997	1998	
Hold public meeting to keep publics informed and involved in recovery efforts, HCP provisions, management plans, etc.	ICO	Annually	1997	2017	All cooperators will assist with this task.
Conduct educational workshop about Utah prairie dogs and HCP provisions for pertinent city and county employees	ICO DWR	Annually	1998	2017	
Create and install informative signs at recovery areas describing importance of recovery efforts for Utah prairie dogs	ICO BLM	As needed	1999	2017	
<b>IMPLEMENTATION</b>					
Prepare necessary NEPA documents for all actions on public lands	BLM	As needed	1996	2017	Includes approval of new sites, and management actions at existing sites
Prepare Habitat Conservation Plan for West Desert Recovery Area, including necessary NEPA documentation	DWR ICO	One time	1995	1998	
Prepare five site Management Plans for areas that have been identified as high priority recovery sites. Includes short term and long term management goals	BLM	One time	1996	1997	
<b>ADMINISTRATION</b>					
Administer contracts for all contractors implementing management plan and recovery plan actions	BLM	As needed			

ry Item	Lead Agency <sup>1</sup>	Frequency	Start Date	Stop Date	Comments
<b>ADMINISTRATION (cont.)</b>					
Administer provisions in HCP, including tracking levels of take of acres of habitat and numbers of animals	ICO DWR	Annually	1997	2017	
Maintain accounting of mitigation measures implemented to offset take of habitat/animals; Summarize in annual report by 15 February of the following year	ICO DWR	Annually	1997	2017	
Administer 4d rule by issuing control permits as requested	DWR	Annually	1984	ongoing	
Prepare annual report summarizing all monitoring, research, and recovery activities that occurred during the year	DWR	Annually	1976	ongoing	
Hold semi-annual or annual interagency coordination meetings to review progress towards implementation of the HCP, Conservation Strategy, Management Plans, and Recovery Plan	ICO DWR	Annually	1997	2017	
Revise Recovery Plan to incorporate new biological information	FWS		2003	2006	

<sup>1</sup>Lead agency is not necessarily the funding agency.

## 7.0 INDIRECT EFFECTS

### 7.1 Utah Prairie Dogs

Economic growth in Iron County will occur primarily on private lands in or near municipalities where there are available utilities. These growth rates and plans are quantified as best as possible in Section 5 based on Iron County's General Plan (1995) and "Tier" growth areas. Direct impacts to Utah prairie dogs are best characterized as habitat loss due to development activities. Since individuals will be translocated prior to any construction activities, there is little chance of any significant death due to vehicle strikes, trampling, or covering of burrow entrances. A significant proportion (80-90%) of those Utah prairie dogs that are translocated will be lost from the population due to dispersal, predation, or stress-caused mortality. However, despite the high mortality rate associated with translocating Utah prairie dogs to new habitat, successful establishment of Utah prairie dogs at public land sites will ultimately be beneficial to the species.

Another indirect effect of this habitat conservation plan is that it will coincide with increased growth and development in and around existing colonies of Utah prairie dogs. This, in turn, will lead to

increased isolation and fragmentation of existing private land colonies, increased disturbance from persons and pets, depredation by pets, and increased hazards due to vehicles, ATV's, and other anthropogenic causes.

## **7.2 Other Wildlife Species**

Quantification of indirect effects to bald eagles, burrowing owls, ferruginous hawks, Swainson's hawks, and sage grouse from the implementation of this HCP are difficult to assess. All but the bald eagle, which is federally threatened and state endangered, are considered "sensitive" by the UDWR (UDWR 1997) and State of Utah Natural Heritage Program, and are recognized by the USFWS as "species of concern". Only bald eagles are known to occur in significant numbers on private lands in Iron County that also contain Utah prairie dogs. The other species mentioned above are most common in the western part of the county, away from the urban developing areas. It is expected that any negative effects associated with development of Utah prairie dog habitat on private lands will be offset by benefits derived from creating large, protected tracts of habitat on public lands.

## **7.3 Plants**

There are no known listed or candidate plant species that will be negatively affected by approval of this habitat conservation plan.

## **7.4 Critical Habitat**

No critical habitat has been designated for the Utah prairie dog or any other listed species in the plan area. Therefore, approval of this HCP will have no indirect effect on critical habitat.

## **7.5 Cumulative Effects**

Cumulative effects are the sum of actions over the life of the plan. Cumulative effects will include cumulative take of habitat on private lands and cumulative gain of habitat on public lands; cumulative number of Utah prairie dogs moved from private lands and cumulative gains of Utah prairie dogs on public lands; and the overall progress towards recovery in the West Desert Recovery Area.

# **8.0 ALTERNATIVES ANALYZED**

The Endangered Species Act requires that "alternative actions to such taking" be described, as well as an explanation as to why these alternatives were not selected.

## **8.1 No Action**

The No Action alternative assumes that no county-wide HCP would be prepared and that a Section 10(a) permit would not be pursued. Current federal laws would remain in place and failure to comply

with these laws may result in prosecution if take occurs. Section 4(d) permits will still be issued and individual Section 10(a) permits may still be sought. Under this alternative, Utah prairie dog habitat would continue to be lost due to unregulated take, habitat would become more fragmented as development around colonies continues, disturbance will increase as more persons and domestic animals come in contact with colonies of Utah prairie dogs, and economic development would be constrained. Cumulative impacts to Utah prairie dogs would be difficult to quantify. Therefore, this alternative was rejected because it is deleterious to private landowners, local government, and in the long-term, the Utah prairie dog.

## **8.2 County-Wide HCP**

Because of the patchy distribution of Utah prairie dogs in Iron County, as well as the large percentage of occupied habitat and numbers of Utah prairie dogs on private lands, development of a county-wide HCP was analyzed. A county-wide HCP allows for establishment of long-term levels of take, allows for monitoring of cumulative effects; significantly reduces costs to individual land owners; allows for planning and reduces time delays for builders; and helps to facilitate cooperation between local, state, and federal agencies and individuals. Because of these benefits, this alternative was accepted.

## **8.3 Purchase/Preserve Existing Habitat**

Rather than translocating Utah prairie dogs to public lands, an alternative would be to purchase/preserve existing privately owned habitat. However, this alternative was rejected because prairie dogs on private property in Iron County are very patchily distributed, resulting in numerous, isolated colonies. As development around these colonies continues, they will become more isolated and more fragmented, and thus the population as a whole will become less viable. The opportunity exists on public lands to create and maintain large, viable colonies that can be managed and protected, and distributed such that periodic genetic exchange is possible. However, conservation easements to protect prairie dogs on private lands until such time as they become firmly established on public lands continues to be acceptable in conjunction with creation of new public land sites, and is encouraged.

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## 10.0 Appendices

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- I Utah prairie dog clearance area survey protocol
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## **Appendix I. Utah prairie dog clearance area 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 clearance areas. Utah prairie dog clearance areas are defined as those areas where Utah prairie dogs have been mapped since 1976 (Utah prairie dog habitat), plus an additional area surrounding that which encompasses an estimate of home range, disturbance distance, and mapping error. Any new colonies that are discovered during annual monitoring will be added to the maps by Utah Division of Wildlife Resources (UDWR) and must undergo the same clearance procedures as previously mapped clearance areas. This survey protocol applies to projects on both Federal and non-Federal lands.

A. Federal Actions: For Federal actions, this survey protocol is intended to provide technical assistance to determine presence or absence of Utah prairie dogs in a proposed project area. This protocol will also determine if the proposed action will affect Utah prairie dogs. Additionally, this protocol will assist the U. S. Fish and Wildlife Service (USFWS) in developing an incidental take statement which anticipates the number of Utah prairie dogs and amount of prairie dog habitat which may be incidentally taken through implementation of the proposed action. Survey information would also assist the action agency in modifying the proposed action or developing an alternative action that would minimize or avoid incidental take of Utah prairie dogs or their habitat. This is covered under Section 7(a)(1) of the ESA which requires all Federal agencies to consult with the USFWS and use their authorities to carry out programs for the conservation of endangered and threatened species.

If, 1) the action agency has determined that the proposed action is not likely to adversely affect Utah prairie dogs because the action area does not fall into the delineated clearance area or, if it is in the clearance area and no evidence of prairie dogs were found, and 2) Utah prairie dogs are subsequently found in the action area during implementation of the agency action, the action should immediately stop and USFWS be notified. The USFWS should be notified in writing within three days of finding prairie dogs. This short notification period will help ensure a prompt response by the USFWS and the UDWR to facilitate compliance with the ESA.

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. In areas deemed to be Utah prairie dog clearance areas, and where avoidance is not possible, a habitat conservation plan (HCP) will need to be agreed upon by the proponent of the project and approved by USFWS. The HCP is required as part of the ESA section 10(a)(1)(B) permit application submitted to USFWS to obtain the necessary authorization to incidentally "take" a federally-listed species. Planning agencies or other local or state agencies have not been delegated authority to determine if or when a section 10(a)(1)(B) incidental take permit is needed under the ESA. The USFWS is available to answer inquiries and make determinations on the need for an incidental take permit based on the submission of survey results.

If the proposed project area falls within a delineated clearance area, an HCP needs to be developed, or, in the case of Iron County, the HCP should be agreed to by the proponent of the project and signed. If the building proponent declines protection under the county-wide HCP, they must sign a waiver and develop their own HCP along with proper agency guidance.

All requirements of the ESA should be completed prior to the initiation of any part of the proposed project. Failure to submit survey report forms and survey maps to UDWR on the proposed project may result in delay of the project.

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. A minimum of 20 hours of documented field experience surveying for Utah prairie dogs and prairie dog sign is required.

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 ascertained when an owner/developer applies for a building permit or a conditional use permit. Maps of the area to be developed can be found at the Utah Division of Wildlife Resources or the local building permit office. These maps will be checked to determine if the proposed project area falls within a delineated clearance area. Surveys must be conducted if the project area lies within the boundaries of a delineated clearance area.

Locating Utah prairie dogs within the boundaries of the project area is not the only factor necessary for the action to result in take. For example, the time or season of the survey may not allow the surveyor to observe prairie dogs as they may be hibernating. If no Utah prairie dogs are found, but active burrows are located within the project area, the evidence suggests that Utah prairie dogs occupy that area.

For surface disturbing actions that require a building permit or a conditional use permit, a Presence or Absence Survey must be conducted in the project area. The survey information will be used to determine if the proposed project will affect Utah prairie dogs. Depending on the type

of action and location of prairie dogs relative to the area to be disturbed, prairie dogs may have to be translocated to an approved location.

C. Survey Methods: A Presence or Absence Survey for Utah prairie dogs is required within the clearance areas. The purpose of this survey is to determine if Utah prairie dogs inhabit the proposed project area. This survey also determines the impacts, if any, of potential land disturbance activities to local prairie dog populations. A Presence or Absence Survey equivalent to that described below must be used to determine if the proposed action may affect Utah prairie dogs. 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 for Utah prairie dogs must be conducted between 08:00 and 10:00 hours, and between 15:00 and 18:00 hours. Utah prairie dogs tend to stay in their burrows during midday, so surveys done then will not be accepted as they will not accurately reflect prairie dog numbers. 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. Two surveys must be conducted with at least seven days separating them.

The entire clearance 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 begin to 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. Surveyors must walk the transects, using a compass for orientation, making sure that distribution of burrows does not dictate the line of travel. 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 how accurate their counts were. 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: When mapping the occupied and potentially occupied areas of Utah prairie dogs, 1:24,000 USGS 7.5 minute topographical maps are required for use to maintain consistency. All known colonies to date have been mapped using 1:24,000 scale maps. The map must include the area surveyed and where prairie dogs and prairie dog burrows were found. There will be two surveys per action area and both will be documented on survey report

forms. Completed survey report forms must accompany a copy of the map. The forms must be completed and map turned in even if no prairie dogs or evidence of prairie dogs were found.

E. Trapping and Translocating: If Utah prairie dog presence is determined and the proposed action will result in take, all Utah prairie dogs affected by the action will be trapped and translocated. Trapping will continue for 30 days or until no more than one prairie dog is left on a parcel three acres or less in size or no more than two prairie dogs on a parcel larger than three acres. Utah prairie dogs removed during trapping will be translocated to approved release sites and specific methods of translocating them must be followed (i.e., what season translocation can occur).

F. Survey Time Period: Survey time for determining whether an action may affect Utah prairie dogs is not limited. Survey time for Presence or Absence Surveys is limited to the activity period of Utah prairie dogs. The activity period of prairie dogs is generally from 15 March through 1 September. At higher elevations (greater than 6,000 feet), the activity period tends to be shorter, from 1 April through 1 September. Given this difference, it is required that surveys only be conducted between 1 April and 1 September. This survey window is based on the activity period for Utah prairie dogs during a typical year and equates to the period of time when prairie dogs are active above ground. Surveys conducted outside of this window may not accurately reflect the numbers of prairie dogs in the area as they are not active nor above ground often. Surveys done outside of the required window can only be conducted if the ground is clear from snow. These surveys can only determine if burrows are present or absent from an area. If burrows are found, it is a good indication that prairie dogs are presently occupying the area. Clearance surveys conducted are valid from the survey date through the following 31 March.

If development must occur outside of the 1 April - 1 September time frame, translocating Utah prairie dogs cannot be done. It would disrupt their hibernation and they would not survive. If a spring count was done for the action area, those numbers will be used to determine take. If there was no spring count conducted, the highest count of Utah prairie dogs from the previous five years or the density of 0.052 prairie dogs per acre, whichever is greater, will be used to determine take.

G. Survey Results: Survey results, including completed copies of 1:24,000 USGS maps, must be submitted to UDWR within seven days of the last survey. Prompt submittal allows appropriate steps to be taken and helps to assure expediency. These forms are used to assess if the surveys were done correctly and completely. They also aide in determining the impacts, if any, on Utah prairie dogs in the proposed action area. The Utah Division of Wildlife Resources has an additional seven days to analyze the survey data and make a decision regarding the impacts on Utah prairie dogs and, if necessary, when trapping and translocating would begin. If removal of prairie dogs is found to be necessary and the removal dates fall within the translocation window of 1 July - 31 August, UDWR has 30 days to translocate all Utah prairie dogs or until no more than one prairie dog remains on parcels three acres or less in size, or two prairie dogs remain on parcels larger than three acres. Development must be delayed until this is reached.

**Utah Prairie Dog Clearance Area Report Form**

Survey #: \_\_\_\_\_

Survey Date : \_\_\_\_\_ Cloud Cover: \_\_\_\_\_ Elevation: \_\_\_\_\_

Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_ Wind Speed: \_\_\_\_\_ Colony: \_\_\_\_\_

Size of Parcel to be Developed: \_\_\_\_\_

Amount (size) of Parcel within Utah Prairie Dog Clearance Area: \_\_\_\_\_

Location of Site: \_\_\_\_\_

Description of Site: \_\_\_\_\_  
\_\_\_\_\_

Number of Utah Prairie Dogs Observed

	Count 1	Count 2	Count 3	Count 4
Adults:	_____	_____	_____	_____
Juveniles:	_____	_____	_____	_____
Total:	_____	_____	_____	_____

Transect Results

Number of 10m Transects: \_\_\_\_\_ Length of Transects: \_\_\_\_\_

Total Number of Burrows Observed: \_\_\_\_\_  
Number Active: \_\_\_\_\_  
Number Inactive: \_\_\_\_\_  
Number Abandoned: \_\_\_\_\_

Other Species: \_\_\_\_\_  
\_\_\_\_\_

Visual Observations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Appendix II. Utah prairie dog translocation protocol

Utah prairie dog release cages, measuring 4 x 3 x 2 feet and fashioned out of a rebar frame with chicken wire sides and tops, will be placed at the release site prior to prairie dog release. The cages will be placed over paired holes that are less than one foot wide and that are drilled to a depth of six feet at 45 degree angles. Additional dispersal holes must be drilled around the perimeter of the grouped cages. These holes will be drilled using a hydraulic gasoline powered auger with a seven foot long drill bit. The cages will be supplied with alfalfa pellets and water upon the release of prairie dogs, as well as five gallon drinkers placed in the center of the release areas and filled as needed.

Utah prairie dogs are captured using double-door Tomahawk live traps baited with peanut butter and rolled oats. The traps are placed around the entrance to their burrows with the opening of the traps facing the burrow entrance. Each juvenile and female prairie dog trapped is weighed using a spring scale to determine if it meets the weight requirements. If they do not, they must be released at the location of capture immediately. As soon as prairie dogs are trapped, they will be dusted with Sevin™ brand insecticide to kill fleas which serve as a vector in the spread of plague. Every effort will be made to release the prairie dogs on the same day they are trapped. If this is not possible, they will be held in a quiet, covered building overnight, given water and alfalfa pellets, and then transported to the release site the following morning. Data on captured prairie dogs (colony trapped, # of traps set, # caught, age, sex, and transplant site) will be recorded on the Daily Summary data sheet.

Utah prairie dogs brought to the release site are sexed and aged (adult or juvenile) while in the trap and data recorded on Utah Prairie Dog Release forms. The trap and prairie dog are then weighed using a spring scale and the weight recorded. If the age cannot be determined simply by observing the prairie dogs, it may be determined by weight, although it is extremely subjective. If the prairie dog is a male and weighs less than 800 grams, he most likely is a juvenile. If he weighs more than 800 grams, then it is probable that he is an adult. If the prairie dog is a female and she weighs less than 700 grams, she most likely is a juvenile. If she weighs more than 700 grams it is reasonable to assume she is an adult. There will be occasions where the only way to determine that a female is an adult female is if she is lactating. If she is not, then it can be safely assumed that she is a juvenile. Time of year is an important factor for using weight as an age indicator. For example, a juvenile male may weigh 500 grams in July, but may weigh 800 grams at the end of August. Extreme care must be taken when determining age. Also noted on the forms are any distinguishing marks, if the prairie dog appears to be sick or extremely stressed (i.e., diarrhea), if it is a lactating female, or any other pertinent data. The prairie dogs are then herded into a cloth cone to restrain them. While the prairie dogs are restrained, they are ear tagged in both ears with #1 monel ear tags and then placed in the release cages. An effort will be made to trap and release family groups together.

At new sites, adult males will be transplanted during the spring and early summer beginning on 1 April. Each dispersing male creates a series of burrows as they move, developing a system of established burrows favorable to subsequent releases. Juveniles and lactating females suffered an immediate high mortality (juveniles 100%; adult females 72%) when translocated before July,

most likely due to loss of energy reserves (Jacquart et al. 1986). Therefore, juveniles are not transplanted until they attain a mass of 500 grams, and post-partum females until they reach a mass of 700 grams, which usually is not until July. The allowable starting date to translocate juveniles and females is 1 July. Studies by Ackers (1992) showed that survival from one breeding season to the next depends largely upon the accumulation of fat reserves for the winter. Based on this data, no prairie dogs will be translocated after 31 August.

At established sites all Utah prairie dogs, including adult males, will be translocated after 1 July. The adult males are not needed to establish a burrow system because one should already be in place.

There will be active predator control at newly established translocation colonies for badgers, coyotes, and raptors for the entire translocation period. Upon mutual agreement between UDWR, BLM, and Wildlife Services, predator control may be continued for up to three years after translocations have ceased. Predator control may be reinitiated at translocation sites if the spring count falls below 10 and all three agencies agree it is necessary. This re-initiation criterion holds true for both new and supplemental sites.

Up to 200 Utah prairie dogs will be introduced at each new transplant site in each of three consecutive years. No prairie dogs will be translocated to an area that is within one mile of an existing colony unless that colony has been at zero for three consecutive years.



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF WILDLIFE RESOURCES

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June 7, 1996

R.L. Gardner, Chairman  
Iron County Commission  
68 South 100 East  
Parowan, UT 84761

Dear Commissioner Gardner:

The Division of Wildlife Resources strongly supports the county's efforts to develop a county-wide Habitat Conservation Plan (HCP) emphasizing the Utah prairie dog, and is pleased to assist Iron County produce and implement such an undertaking, as it is consistent with our mission to conserve all species of protected wildlife for their intrinsic, scientific, aesthetic, and recreational values. At a recent meeting held in Cedar City to discuss Iron County's efforts to develop an HCP, you inquired what resources the Division of Wildlife Resources was willing to commit towards this effort. I wanted to reiterate in writing the commitments expressed by Assistant Director John Kimball at that meeting. The Division has been, and will continue to do as funding permits, the following:

Provide technical expertise: Division personnel are deeply involved in all aspects of recovery for the Utah prairie dog, and have been providing "on-the-ground" biological expertise to help develop and implement the county's HCP, as well as the Utah Prairie Dog Recovery Plan and Conservation Strategy on which the HCP will depend. Division personnel are also working closely with federal land management agencies to identify suitable transplant sites, produce technical recommendations to develop those sites, and develop long-term management plans for those sites to ensure they remain viable well into the future. The Division will continue to provide this level of technical assistance to help Iron County produce and implement a biologically acceptable HCP that will benefit Iron County, private property owners in the County, and the Utah prairie dog. We also will continue to make information contained in our files available as needed to produce the HCP.

Conduct population monitoring: The Division will continue to monitor the status of Utah prairie dog populations on both private and public lands in the West Desert Recovery Area, as well as the Paunsaugunt and Awapa Plateau Recovery Areas. Population monitoring is an important component of both the HCP and Recovery Plan, and is consistent with the Division's current management efforts. Population monitoring represents a significant commitment of the Division's available resources for prairie dog management, and will continue at current levels.



R.L. Gardner  
June 7, 1996  
Page 2

Conduct trapping/transplant program: The Utah Prairie Dog Recovery Plan calls for establishing sufficient numbers of Utah prairie dogs on public lands such that the species can be delisted. Towards that end, the Division has had an ongoing transplant program to relocate prairie dogs from private lands where they are considered a nuisance to public lands where they contribute towards recovery. The majority of prairie dogs for this transplant program currently come from agricultural areas where they cause crop damage. It is expected that transplanting prairie dogs from development areas will comprise a significant portion of the Iron County HCP's obligation to minimize take, and that those prairie dogs will replace animals currently being obtained from agricultural areas for transplant. The Division will commit to continue overseeing the transplant program, and provide the traps and equipment needed to capture and relocate prairie dogs. However, because clearing areas of prairie dogs, as most likely will be required by the HCP, is more time consuming and inefficient than the Division's current program of removing surplus animals from agricultural areas, additional funding will be required for removing all prairie dogs from development areas. Funding for removing prairie dogs from such development projects currently is coming from a per animal fee assessed to developers.

Administer control permit program: The Division will continue to administer the Utah prairie dog control program, which allows for control of Utah prairie dogs on agricultural lands by shooting or trapping. This will be particularly important if prairie dogs from development areas replace those from agricultural areas as the primary source of animals for transplanting.

These commitments will continue at current levels as long as funding remains stable for such efforts. However, because the funding for such work comes from annual legislative appropriations and federal Section 6 allocations, the above mentioned commitments, as well as additional future commitments, are contingent upon adequate funding.

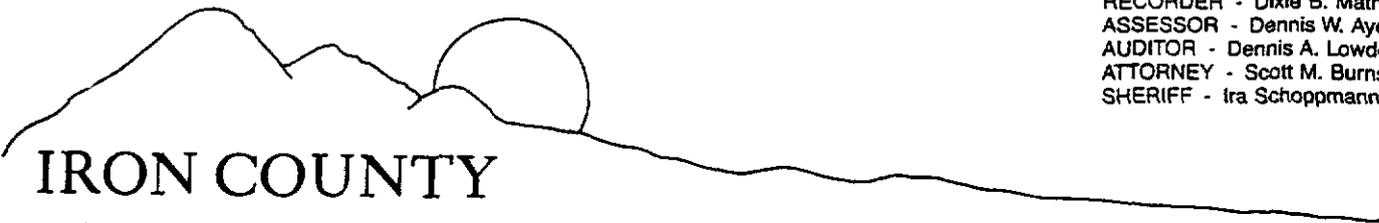
I hope this reiterates the Division's strong commitment towards resolving the conflicts between Utah prairie dogs and development in Iron County, and that we can continue to work together to develop win-win solutions that will benefit the citizens of Iron County and the Utah prairie dog.

Sincerely,

  
Robert G. Valentine  
Director

cc: Robert Williams, USFWS Utah Field Office, Salt Lake City  
Art Tait, BLM, Beaver River Resource Area, Cedar City

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# IRON COUNTY

68 South 100 East, Parowan, Utah 84761. Phone (801) 477-8300 Fax (801) 477-8847

January 5, 1998

Marilet Zablan  
Fish & Wildlife Service  
145 E 1300 South Ste 404  
Salt Lake City Utah 84115

Dear Marilet:

The Iron County Commission recognizes that the Utah prairie dog has been placed on the Threatened species list under the Federal Endangered Species Act and as a result, a great need exists for Iron County to successfully apply for a Section 12 permit through a Habitat Conservation Plan. The following statement provides the basic commitments of Iron County to the recovery plan for the prairie dogs in Iron County.

1. Iron County fully supports the idea of preserving the prairie dog by removing them from private lands in Iron County to designated public lands over a period of time. Iron County will work with the BLM to do its share to prepare and maintain approved transplant sites on public lands within Iron County. This will include clearing the land, reseeding, and fencing as directed by the BLM. This commitment does not include modifications of the area that go beyond natural habitat, i.e. irrigated areas. The county in making this commitment expects the technical assistance of all parties in this process, and expects the various participants to assist in providing labor, equipment, and materials.
2. The Iron County Commission is committed to providing two employees during the time period of April to September of each year (approximately 6 months) to assist in the annual count and to assist in the transplanting of the prairie dogs.
3. The Iron County Commission will work with DWR to ensure that qualified biologists as described in Appendix I of the H.C.P., are available and willing to do the required surveys on private property.

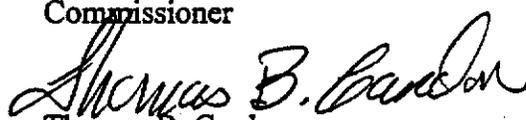
4. Iron County supports the idea of using the building permit process as the trigger for H.C.P. and will train building inspection employees located within Iron County in its proper operation. The building inspection employees will prior to issuing a building permit explain the H.C.P. process to building permit applicants, examine maps and determine for applicants if their property is considered habitat, and will have those who do not wish to participate sign a waiver. In addition, the building department will make available to the Fish and Wildlife service copies of all building permits and other development proposals and cooperate fully to make the process work. The building department may, however, issue building permits to those who choose to pursue their own H.C.P. with the Fish and Wildlife Service.
5. The County will work with permittees on public lands where location sites are approved to obtain their support.
6. The County will work with Federal and State congressional and legislative groups to encourage funding to support the recovery plan as well as proper management of T& E species from entities both public and private. The County will help to promote greater awareness of the needs and responsibilities for environmental and geological concerns.
7. The County will take the lead in organizing and facilitating the meetings of the Steering Committee as outlined in the H.C.P.

Sincerely,

BOARD OF IRON COUNTY COMMISSIONERS



Roy P. Urie  
Commissioner



Thomas B. Cardon  
Commissioner



Dennis E. Stowell  
Commissioner

## Appendix III C



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE  
LINCOLN PLAZA  
145 EAST 1300 SOUTH, SUITE 404  
SALT LAKE CITY, UTAH 84115

In Reply Refer To

(CO/KS/NE/UT)

June 25, 1996

Robert L. Gardner  
Iron County Commissioner  
68 South 100 East  
Parowan, Utah 84761

Dear Mr. Gardner:

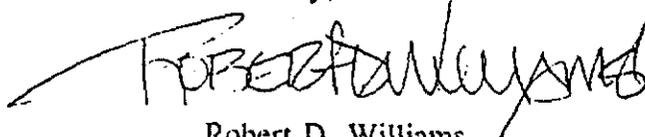
The following commitments from the Fish and Wildlife Service in support of the Utah Prairie Dog Habitat Conservation Plan for Iron County have been developed by representatives of the Utah Field Office and Regional Office in Denver, Colorado. It is our thinking that with the various agency and County commitments that a four member working committee that represents the County, Bureau of Land Management, the Utah Division of Wildlife and Service could outline a draft Habitat Conservation Plan (HCP) for review. Marilet Zablan of the Utah Field Office would represent the Service on such a committee. It is also our opinion that until we charge such a group with preparing a draft HCP we will continue to have difficulty in coming to resolution on what will be acceptable to all parties.

- With ESA Section 6 funding, assist State of Utah in population monitoring of Utah Prairie Dog and implementation of ESA section 4(d) rule.
- Provide staff as available for assistance in Iron County HCP development and for permit processing.
- Co-Host with Senator Bennett an HCP workshop in Iron County to increase public understanding and involvement in various processes (threatened and endangered species listing and recovery, HCP development, permit issuance, etc.).
- Provide staff for assistance in small-scale HCP development and permit processing, as necessary, during development of larger-scale Iron County HCP and permit processing.
- Ensure consistency between reasonable and prudent measures in Utah Prairie Dog habitat addressed under ESA section 7 and measures in the eventual Iron County HCP (e.g., collection and expenditure of Conservation Funds for Utah Prairie Dog, survey and clearance timing, etc.).

- Make Utah Prairie Dog Conservation Funds available for priority research and habitat management as identified in the Conservation Strategy and/or Recovery Plan, and approved by the Utah Prairie Dog Recovery Implementation Committee and or Recovery Team.
- Pursue conservation easements and utilize Partners for Wildlife funding, as available, to secure areas from willing lessees for Utah Prairie Dog conservation.
- Work cooperatively with Iron County, Utah Division of Wildlife Resources, and Bureau of Land Management in pursuit of recovery of the Utah Prairie Dog, including prioritization of funding needs.
- Assist Bureau of Land Management in Utah Prairie Dog transplant site identification and co-host public meetings to be held for National Environmental Policy Act (NEPA) review of site selection and management actions.
- Provide Utah Prairie Dog traps to Utah Division of Wildlife Resources as necessary, and as available, from black-footed ferret conservation efforts elsewhere.
- Provide manpower and funding, as available, for Utah Prairie Dog transplant site preparation, materials, and monitoring.

We continue to look forward to working with you in development of the Utah Prairie Dog HCP. If you have any questions regarding our commitments we can discuss them at the upcoming meeting on July 10, 1996.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert D. Williams". The signature is written in a cursive style with a long horizontal stroke extending to the left.

Robert D. Williams  
Assistant Field Supervisor



## Appendix III D

# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Cedar City District Office  
176 East DL Sargent Drive  
Cedar City, Utah 84720  
Telephone (801) 586-2401

June 6, 1996

R.L. Gardner, Chairman  
Iron County Commission  
68 South 100 East,  
Parowan, Utah 84761

Dear Chairman:

I appreciated the invitation and opportunity to participate at your public meeting on May 28, 1996 to discuss issues pertinent to the Iron County Habitat Conservation Plan (HCP) for the Utah Prairie Dog (UPD).

Based on the discussions and your request for each agency to identify commitments to the finalization of the HCP and to the implementation of such, I submit the following as the Bureaus position in this matter:

1. To assist in the recovery of the UPD.
2. Based on the criteria outlined in the Draft Conservation Strategy (DCS), we will identify sites that would meet or could be modified to meet the habitat requirements of the species to assist in implementation of the strategy.
3. Maintain existing habitat and to the degree possible provide new habitat areas to meet the recovery goals of the U.S. Fish and Wildlife Service (FWS) Recovery Plan as modified or amended by the information gained from the proposed DCS.
4. Evaluate through the required environmental process (EA) the potential impacts of the translocation and recovery of the UPD on other resources and authorized uses, other resources impacts on the UPD and its potential for recovery. This process will not only look at the DCS but also take into consideration the long term occupation of the species should they persist in the study locations. We will solicit information and identify concerns of the public and identify potential mitigating measures that addresses concerns and minimizes identified impacts.
5. To support the growth and development of Iron County by receiving UPD's at approved locations on public land in accordance with the decisions reached on the basis of the EA and as directed by the FWS strategy and/or Recovery Plan. Develop individual site specific plans in coordination with public land users, taking into consideration the needs of the species, current users, management of existing resources and opportunities for on site and off site benefits.
6. Expend appropriated funds for the recovery of the UPD on the basis of its priority within the District as compared to obligations for other Threatened and Endangered Species. Funds will be utilized for the most part to approve potential surface disturbing actions, monitor habitat and associated impacts. Funds requested and received in addition to the above will be utilized to improve, maintain or develop habitat for the UPD. Funds received for improvement of other

uses on public lands when used in areas associated with the occurrence of the UPD will be considered for use in a way that provides secondary benefits to the UPD and their habitat. Funds available to the BLM from contributions or from mitigation fees will be expended to provide satisfactory habitat in effort to recover the species.

7. It is our goal not to displace any existing uses on the public lands at the expense of another use but to achieve compatibility through mitigation whenever this is possible.

The above is provided based on the information we now have and our desire to assist the County and others in continued growth and development at the same time striving to maintain the customary uses of public land yet promote the recovery of T&E species on these lands.

I would greatly appreciate receiving a copy of each of the other agencies or groups response to your request. A copy of the County's commitment as presented by yourself would also be helpful in our planning for this effort.

I trust this meets your expectations and will allow you to continue the Iron County HCP.

Sincerely yours,



Arthur L. Tait  
Manager, Beaver River Resource Area

cc.

Robert Williams, USFWS,

John Kimball, UDWR

~~Ken McDonald, UDWR, Cedar City, UT~~

Appendix IV

**IRON COUNTY HABITAT CONSERVATION PLAN  
PARTICIPATION ELECTION FORM**

In conjunction with the completion and implementation of the Iron County Habitat Conservation Plan (HCP) the U.S. Fish and Wildlife Service (Service) has issued an incidental take permit (permit) to Iron County. By accepting/not accepting the conditions of the HCP and signing the appropriate line below, a person/company would/would not be afforded protection from prosecution for violations of the Endangered Species Act (ESA) when developing Utah prairie dog (*Cynomys parvidens*) habitat.

I \_\_\_\_\_ accept the conditions for development outlined in the Iron County HCP and as such I agree to participate in the HCP. By accepting those conditions, I understand that I will have protection from prosecution under the ESA in connection with my planned development if I abide by the conditions of the permit.

I \_\_\_\_\_ do not accept the conditions for development as outlined in the Iron County HCP and as such I do not wish to participate in the HCP. By choosing not to participate I acknowledge the following:

I understand and have been informed that the property planned to be developed by me/my company is Utah prairie dog habitat.

I understand that by choosing not to participate the Iron County HCP, development of Utah prairie dog habitat by me/my company will be at my own peril and I will not be afforded protection under the permit issued pursuant to the Iron County HCP.

I understand that it will be my responsibility to develop my own HCP to cover the area proposed for development.

I understand that by failing to complete a HCP for the property in question and not receiving an incidental take permit, I will be afforded no protection from prosecution under the ESA for violations which I/my company may commit during the development of the property in question.

I understand that by choosing to develop my own HCP, I will be delaying my planned development by a minimum of 120 days (time necessary to process an HCP) with no guarantee that an incidental take permit will be issued at the completion of the HCP.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

**Appendix V. List of building permit offices**

Iron County  
Building Inspector  
88 East Fiddlers Canyon Road  
Cedar City, Utah 84720

Cedar City Corporation  
110 North Main  
Cedar City, Utah 84720

Parowan City  
5 South Main  
Parowan, Utah 84761

City of Paragonah  
80 West 100 North  
Paragonah, Utah 84760

City of Enoch  
4864 North 600 East  
Enoch, Utah 84720

City of Kannaraville  
50 East Center  
Kannaraville, Utah 84722

Appendix VI

One-time Funding Request for Five-Year Cooperative Conservation Strategy Studies

The dollar figures below reflect the currently funded and unfunded subset of the total funding required to implement the Cooperative Conservation Strategy Studies. As noted below, funding and services are being provided by certain entities as a result of the Iron County HCP; funding amounts shown in the Table below are those amounts required to complete the Cooperative Conservation Strategy Studies.

Item Description	Iron County		UDWR		BLM		FWS		\$ Total Request	
	Funded	Request	Funded	Request	Funded	Request	Funded	Request	Funded	Request
NEPA and ESA Section 7 Compliance (development of management plans, environmental assessment, public meetings, etc.)	9,000	0	15,000	0	80,000	0	15,000	0	119,000	0
Site Preparation and Maintenance (vegetation treatment, seed, fencing)	50,000	0	0	0	50,000	160,000	22,000	0	122,000	160,000
Utah Prairie Dog Relocation (survey, trapping, relocation)	50,000	0	100,000	0	0	0	15,000	0	165,000	0
Data Collection and Analysis (monitoring Utah Prairie Dogs and site treatments, vegetation sampling, report preparation)	0	0	20,000	0	10,000	0	22,000	400,000	52,000	400,000
<b>Total</b>	<b>109,000</b>	<b>0</b>	<b>135,000</b>	<b>0</b>	<b>140,000</b>	<b>160,000</b>	<b>74,000</b>	<b>400,000</b>	<b>458,000</b>	<b>560,000</b>