

**ENVIRONMENTAL ASSESSMENT
FOR THE
PROGRAMMATIC SAFE HARBOR
AGREEMENT
FOR
UTAH PRAIRIE DOGS**

April 17, 2008

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EXECUTIVE SUMMARY

The Utah prairie dog (*Cynomys parvidens*) has been listed under the Endangered Species Act (ESA) since 1973. Currently approximately 75% of the species population and habitat occur on private lands. In an effort to promote conservation and recovery of the species on private lands, Safe Harbor Agreements may be used which provide net conservation benefits to the species while providing assurances and incentives to private land owners. Sections 2, 7, and 10 of the Endangered Species Act allow the U.S. Fish and Wildlife Service (USFWS/Service) to enter into Safe Harbor Agreements and issue permits. The Panoramaland Resource Conservation and Development Council (RC&D Council), Inc. have submitted a Programmatic Safe Harbor Agreement (Programmatic Agreement) for the Utah prairie dog and have applied for an Endangered Species Act 10(a)(1)(A) Enhancement of Survival permit (10(a)(1)(A) permit). The USFWS must analyze the program under the National Environmental Policy Act.

The RC&D Council is a local nonprofit community-based organization in South-Central Utah established under State of Utah law with the purpose of fostering and advocating natural resource conservation through community restoration. The RC&D Council recently completed a broad-based planning process which identified the need to enhance fish and wildlife habitat. In response to this need, the RC&D Council has taken the lead in a cooperative effort designed to promote the conservation and recovery of the Utah Prairie Dog on private lands. This effort will utilize voluntary "Safe Harbor Agreements" with interested private landowners under the terms of a Programmatic Agreement with the USFWS. As part of this initiative, the RC&D Council will hire a qualified professional biologist to oversee and implement the program.

1.0 PURPOSE AND NEED

1.2 Purpose of the proposed action

The purpose of issuing a 10(a)(1)(A) permit and the approval of the Programmatic Agreement is to facilitate conservation activities on non-federal lands within the historical range of the threatened Utah prairie dog. The Programmatic Agreement is intended to create an incentive for non-federal landowners to voluntarily protect Utah prairie dogs and conserve their habitat while providing landowners with the assurance that they will not be subjected to increased restrictions should their beneficial stewardship efforts result in increased Utah prairie dog populations.

The primary purpose of the Programmatic Agreement is to increase participation by making it more efficient for private landowners to become involved in Utah prairie dog conservation and recovery. Therefore, this greater efficiency is anticipated to increase the number of participants, which will increase the acres of available habitat for the species. Without the Programmatic Agreement landowners or managers may become discouraged with the complexity of the permitting process, financial burden, and time delays associated with the issuance of Individual Safe Harbor Agreements. These burdens could delay the needed conservation measures for the Utah prairie dog.

1.3 Need for the proposed action

As stated above, the Utah prairie dog is a listed threatened species, therefore measures need to be taken to protect them and conserve their habitat. Approximately 75% of the species' population occurs on private lands. As such, cooperation of landowners is very important. The Programmatic Agreement and associated 10(a)(1)(A) permit is a mechanism to work cooperatively with landowners by providing them regulatory assurances as well as increasing Utah prairie dog populations and/or enhancing, restoring, maintaining, or expanding prairie dog habitat.

Without engaging private landowners in conservation and management of Utah prairie dogs, the recovery of the species will be difficult. Currently, many landowners fear that the presence of a threatened or endangered species could restrict what they can do with their land (Environmental Defense. 2008). As a result, they may manage their property to discourage the presence of the Utah prairie dog.

1.3 Decisions to Be Made

The USFWS will make the final decision on the issuance of the 10(a)(1)(A) permit. Possible outcomes are to issue a section 10(a)(1)(A) permit under the Endangered Species Act (ESA) based on the Programmatic Agreement as proposed, issue a 10(a)(1)(A) permit with modifications, or deny the 10(a)(1)(A) permit application and not approve the Programmatic Agreement. To issue the 10(a)(1)(A) permit, the USFWS must find:

1. The take will be incidental to an otherwise lawful activity and will be in accordance with the terms of the Programmatic Agreement.
2. The Programmatic Agreement complies with the requirements of the USFWS Safe Harbor policy.
3. The probable direct and indirect effects of any authorized take will not appreciably reduce the likelihood of survival and recovery in the wild of any species.
4. Implementation of the terms of the Programmatic Agreement is consistent with applicable federal, State, and Tribal laws and regulations.
5. Implementation of the terms of the Programmatic Agreement will not be in conflict with any ongoing conservation programs for species covered by the 10(a)(1)(A) permit.
6. The RC&D Council has shown capability for, and commitment to, implementing all of the terms of the Programmatic Agreement.

Assuming the measures included in the proposed Programmatic Agreement for the Utah prairie dog meet these criteria, it is the responsibility of the USFWS to issue the desired 10(a)(1)(A) permit for the species associated with the land management activities covered in the Programmatic Agreement.

1.4 NEPA Responsibilities

This Environmental Assessment (EA) has been developed as part of the public process implemented by the USFWS in deciding whether to issue a 10(a)(1)(A) permit as required by the National Environmental Policy Act (NEPA). This EA has been prepared to analyze the proposed Programmatic Agreement for the Utah prairie dog. The EA is an analysis of potential impacts that could result

with the implementation of the proposed action or alternatives to the proposed action. This EA will ensure compliance with NEPA, and make a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40CFR 1508.27. This EA will also provide evidence for determining whether an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI) should be prepared. If it is determined that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project.

1.5 Issues Raised During Project Planning

During the project planning period there were two respondents. The primary concerns include:

1. Allowing private landowners incidental take.
2. The USFWS would relinquish management of the Utah prairie dog to the Panoramaland Resource Conservation and Development Council Inc.

2.0 ALTERNATIVES

2.1 Alternative A-No Action Alternative

With the No Action Alternative, the USFWS would not approve the Programmatic Agreement or issue the associated 10(a)(1)(A) permit. Therefore, a coordinated effort to conserve and manage Utah prairie dogs on non-federal properties using the Programmatic Agreement would not occur. Agricultural activities would continue within the covered areas in accordance with applicable laws but it is uncertain if efforts to provide conservation benefits for Utah prairie dogs or other listed species would occur. The additional benefits from the conservation requirements of the Preferred Alternative would not be realized under the No Action Alternative. With the continuation of the No Action Alternative conservation efforts for this species would primarily occur on federal lands. Therefore, 75% of the species will not receive conservation benefits.

2.2 Alternative B-Preferred Alternative (Approval of Programmatic Safe Harbor Agreement and Issuance of the 10(a)(1)(A) Permit)

The Preferred Alternative is the approval of the Programmatic Agreement and the issuance of a 10(a)(1)(A) permit. The Preferred Alternative is intended to provide net conservation benefits for the Utah prairie dog.

Under the Programmatic Agreement, the RC&D Council will work with private landowners to develop Cooperative Agreements which will incorporate conservation measures such as enhancing habitat, creating new habitat, protecting existing habitat, reintroducing Utah prairie dog colonies, and monitoring and reporting conservation efforts. Upon review and approval of the Cooperative Agreements by the USFWS, the RC&D Council will issue Certificates of Inclusion to private landowners. Utah prairie dog colonies existing on property at the time of enrollment are considered baseline and are fully protected under the Endangered Species Act. The Programmatic Agreement and the ESA regulatory assurances would only cover those Utah prairie dog populations and habitat created through participation in the Programmatic Agreement. Landowners may also take their property back to the baseline condition after the term of at least 15

years. These impacts to Utah prairie dog under the 10(a)(1)(A) permit, however, would be minimized by the habitat benefits described above. Neighboring landowners can seek coverage under the Programmatic Agreement against future regulatory restrictions should the Utah prairie dog move onto their property as a result of conservation and management activities. These regulatory assurances, however, only cover Utah prairie dog colonies and habitat that are not part of an enrolled property's existing baseline condition.

Participation from private landowners is voluntary. Each participating landowner must sign and agree to the terms specified in Appendix B of the Programmatic Agreement. Regulations require that baseline surveys be performed; reasonable notification will be given of any activity that may result in take of the covered species; and that access be granted by the private landowner to monitor conservation and management actions. As the Programmatic Agreement administrator, the RC&D Council will coordinate with the USFWS and Utah Division of Wildlife Resources (UDWR) on all conservation measures and take associated with the individual Cooperative Agreement. The RC&D Council will employ a qualified biologist to oversee and coordinate the program.

Each Cooperative Agreement shall specify the individual conservation measures and management activities to be carried out on the enrolled property to which it applies and a timetable for implementing those activities. The RC&D Council will ensure management activities are carried out as described in each Cooperative Agreement and that all reporting requirements are completed. The following activities which have been identified by the USFWS as providing a net conservation benefit to the Utah prairie dog. A combination of the activities as described below will be included in each Cooperative Agreement with individual landowners.

Standard Activities

The following management activities shall be included in all Cooperative Agreements:

- Limit the use of pesticides and herbicides within 100 feet of active prairie dog burrows to those included on a list of USFWS-approved chemicals.
- Avoid the use of heavy equipment in occupied prairie dog habitat during sensitive life stages such as breeding and nursing.
- All practices will be planned and applied in a manner that will avoid or minimize adverse effects to sensitive, threatened or endangered species.
- Monitor habitat restoration activities to assess the general condition of habitat, use of the habitat by the covered species, progress of the ongoing management activities, and satisfaction of the USFWS with the project, and adjust practices as deemed necessary.

At least two of the following management activities to improve, maintain and/or restore Utah prairie dog habitat shall be included in all cooperative agreements except as approved by the USFWS:

- Prescribed grazing to increase visual surveillance, increase forage quantity and quality, and deferment or rest to create vegetative barriers to limit expansion to undesirable locations, and/or
- Brush management to restore plant community balance, increase visual surveillance, and increase forage quantity and quality, and/or
- Seeding to restore degraded rangelands or pasturelands and bare ground, and increase forage quantity and quality, and/or,
- Prescribed burning to increase forage quantity and quality, and/or,
- Noxious weed control to facilitate restoration of rangelands or pasturelands, increase visual surveillance, and increase forage quantity and quality.

Additional Activities

A private landowner may elect to include one or more of the following management activities in a Cooperative agreement:

- Irrigation improvements and control to reduce the chance of burrow flooding, and increase forage quantity and quality, increase access to moist vegetation,
- Plant vegetative barriers, such as, windbreaks, shelterbelts, or rows of tall grasses and shrubs to manage dispersal of prairie dogs into sensitive areas identified in Exhibit A of the Agreement, thereby minimizing the need for future control of prairie dogs.
- Dust burrows for fleas using pesticides and techniques approved by the Utah Prairie Dog Recovery Team, to prevent the spread of plague, or
- Artificial burrow preparation and translocation of live Utah prairie dogs to establish a new colony in suitable habitat.
- Any other conservation measure that provides a net conservation benefit to the species as approved by the USFWS.

Incidental Take

A private landowner's activities may result in some incidental take of Utah prairie dog while engaging in normal agricultural activities such as grazing, ranching, and farming. Incidental take will be avoided and minimized through the following:

- In occupied Utah prairie dog habitat, deep tilling (greater than 18 inches) will be avoided. If it cannot be avoided, it will occur when adults and pups are above ground and can avoid impacts of equipment.
- The use of heavy equipment in occupied habitat will be avoided during breeding and nursing seasons.

Control

Due to management activities, a participant may experience increases in Utah prairie dog populations that could detrimentally impact the participant's ongoing ranching and farming activities. Thus, control measures may be authorized in a Cooperative Agreement if total adult prairie dogs on the enrolled property exceed

a specified number, which shall be no less than 20 adults (as determined by the previous spring count) or twice the baseline number (whichever is larger). In addition to a cap on numbers, areas within the enrolled property may be identified as areas of control where animals could detrimentally impact the participants' ongoing ranching and farming activities, or where they detrimentally impact structures (i.e., within 50 feet of a house or structure). Control will be authorized through the issuance of a Certificate of Registration through the Utah Division of Wildlife Resources.

Incentives may be provided to participating private landowners under the Programmatic Agreement for the implementation of conservation measures that will provide net conservation benefits to the species. Financial assistance and other incentives may be provided by USDA Farm Bill Programs, USFWS Partners for Fish & Wildlife Program, the State of Utah, and other partners or cooperators.

2.3 Alternative C-Approval of Individual Safe Harbor Agreements and Issuance of the 10(a)(1)(A) Permit

Under Alternative C, landowners and managers could decide to develop Individual Safe Harbor Agreements and obtain an Individual 10(a)(1)(A) permit.

Individual Agreements and 10(a)(1)(A) permits would provide the same assurances and terms to the landowner as the Programmatic Agreement identified in the Preferred Alternative. The Individual Agreement, however, requires that each landowner perform a complex and lengthy application process. Individual landowners would also be required to implement all conservation measures and reporting requirements associated with the Individual Agreement.

3.0 AFFECTED ENVIRONMENT

The Preferred Alternative proposes to cover Utah prairie dog habitat throughout its range in South-Central Utah on non-federal agricultural lands. Participation is voluntary for landowners and specific sites will be identified as participants enroll in the program. Therefore, the discussion of the affected environment and the environmental consequences must be approached broadly and will include typical Utah prairie dog habitat.

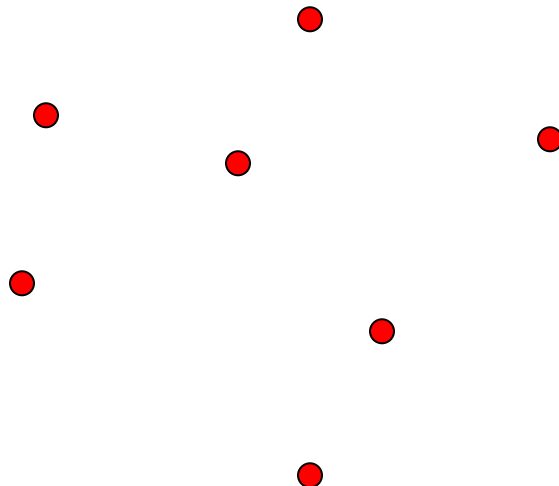
Typical Utah prairie dog habitat includes arid grasslands, sagebrush, and open habitats in South-Central Utah (Zaveloff 1988). Prairie dogs forage primarily on grasses and forbs, and tend to select those with higher moisture content (Crocker-Bedford 1975). Juveniles prefer dead vegetation and cattle dung over leaves and stems of shrubs. Cicadas are the preferred animal food for the Utah prairie dog (Crocker-Bedford and Spillett 1981). They often select colony sites in swales where the vegetation can remain moist even in drought conditions (Collier 1975, Crocker-Bedford and Spillett 1981). Vegetation must be short stature to allow the prairie dogs to see approaching predators as well as have visual contact with other prairie dogs in the colony (Collier 1975, Crocker-Bedford and Spillett 1981). Soils need to be well drained for burrow sites. Burrows must be deep enough to protect the prairie dogs from predators as well as environmental and temperature extremes. Utah prairie dogs are found in elevations from 5,400 feet on valley floors up to 9,500 feet in mountain habitats.

3.1 General Description

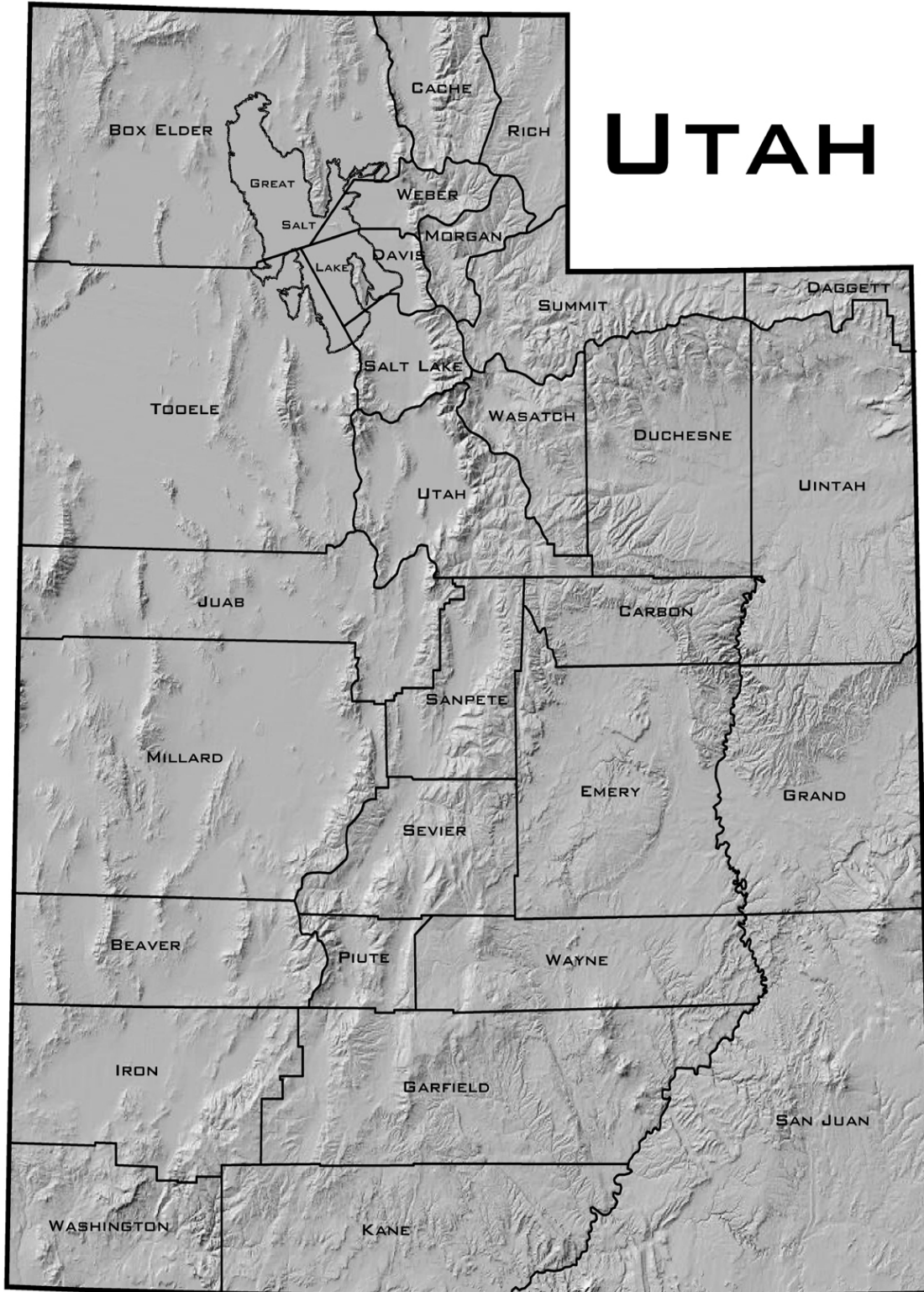
All non-federal agricultural lands with Utah prairie dog habitat in Sevier, Piute, Wayne, Garfield, Kane, Beaver, and Iron counties are eligible for participation in the Programmatic Agreement project area (Map 3.1.2). This area totals 1,103,416 acres which represents approximately 8.5% of the total acres within these counties (June 2004, National Agricultural Statistics Service).

Approximately ninety percent of the acres within these counties are federally owned and managed in compliance with the Endangered Species Act (NRCS, 2008).

The following map identifies the Counties of Utah that are included in the proposed



agreement.



**Map 3.1.2 State of Utah Counties Included in the Safe Harbor Agreement
3.2 Vegetation**

The vegetation likely to be present on enrolled properties will include irrigated cropland which consists primarily of alfalfa and small grains in rotation; irrigated pasture consisting of introduced perennial grasses; and rangeland consisting of grassland or shrub steppe plant communities. Vegetation is currently impacted by existing land-use activities, such as farming, livestock ranching and recreation.

3.3 Wildlife

Existing farming and livestock ranching operations are important to many wildlife species as they incidentally provide food and water. There are a multitude of species that may on occasion occupy the potentially eligible lands within the seven counties included in the Programmatic Agreement. Some of the more common species include but are not limited to: American badger (*Taxidea taxus*), American kestrel (*Falco sparverius*), black-tailed jackrabbit (*Lepus californicus*), Botta's pocket gopher (*Thomomys bottae*), coyote (*Canis latrans*), desert cottontail rabbit (*Sylvilagus audubonii*), desert mule deer (*Odocoileus hemionus crooki*), elk (*Cervus elaphus*), golden eagle (*Aquila chrysaetos*), horned lark (*Eremophila alpestris*), long-tailed weasel (*Mustela frenata*), mourning dove, northern goshawk (*Accipiter gentiles*), pronghorn antelope (*Antilocapra americana*), red-tailed hawk (*Buteo jamaicensis*), rock squirrel (*Spermophilus variegatus*), sage thrasher (*Oreoscoptes montanus*), sage sparrow (*Amphispiza belli*), (*Zenaida macroura*), striped skunk (*Mephitis mephitis*), western meadowlark (*Sturnella neglecta*), greater sage grouse (*Centrocercus urophasianus*), pygmy rabbit (*Brachylagus idahoensis*), burrowing owl (*Speotyto cunicularia*), western rattlesnake (*Crotalus viridis*), and gopher snake (*Pituophis melanoleucus*).

3.4 Threatened and Endangered Species

Thirty threatened, endangered, candidate, and state species of concern are known to occur in the seven counties included in the Programmatic Agreement. Only twelve of the species would likely occur on potentially eligible lands. These species are identified in Table 3.4.1 and described below.

Table 3.4.1 List of Threatened, Endangered, and Candidate Species

Common Name	Scientific Name	Status	Can the species occur within potentially eligible lands?
Birds			
California condor	<i>Gymnogyps californianus</i>	Experimental	Yes
Greater sage-grouse	<i>Centrocercus urophasianus</i>	State Species of Concern	Yes
Mexican spotted owl	<i>Strix occidentalis</i>	Threatened	No
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	No
Ferruginous hawk	<i>Buteo reglis</i>	State Species of Concern	Yes
Burrowing owl	<i>Speotyto cunicularia</i>	State Species of Concern	Yes

Common Name	Scientific Name	Status	Can the species occur within potentially eligible lands?
Western yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate	No
Mammals			
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	State Species of Concern	Yes
Big free-tailed bat	<i>Nyctinomops macrotis</i>	State Species of Concern	Yes
Fringed myotis	<i>Myotis thysanodes</i>	State Species of Concern	Yes
Pygmy rabbit	<i>Brachylagus idahoensis</i>	State Species of Concern	Yes
Spotted bat	<i>Euderma maculatum</i>	State Species of Concern	Yes
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	State Species of Concern	Yes
Utah prairie dog	<i>Cynomys parvidens</i>	Threatened	Yes
Fish			
Bonytail	<i>Gila elegans</i>	Endangered	No
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	Endangered	No
Humpback chub	<i>Gila cypha</i>	Endangered	No
Razorback sucker	<i>Xyrauchen texanus</i>	Endangered	No
Invertebrates			
Coral Pink Sand Dunes tiger beetle	<i>Cincindela limbata albissima</i>	Candidate	No
Kanab ambersnail	<i>Oxyloma haydeni kanabensis</i>	Endangered	No
Plants			
Autumn buttercup	<i>Ranunculus aestivalis</i>	Endangered	Yes
Barneby's reed-mustard	<i>Schoenocrambe barnebyi</i>	Endangered	No
Heliotrope milkvetch	<i>Astragalus montii</i>	Threatened	No
Kadochrome bladderpod	<i>Lesquerella tumulosa</i>	Endangered	No
Last Chance townsendia	<i>Townsendia aprica</i>	Threatened	No
Maguire's daisy	<i>Erigeron maguirei</i>	Threatened	No
Navajo sedge	<i>Carex specuicola</i>	Threatened	No
Rabbit Valley gilia, also known as Alice's wonder flower	<i>Gilia caespitosa or Alicellia caespitosa</i>	Candidate	No
San Rafael cactus	<i>Pediocatus despainii</i>	Endangered	No

Common Name	Scientific Name	Status	Can the species occur within potentially eligible lands?
Siler pincushion cactus	<i>Pediocactus sileri</i>	Threatened	No
Welsh's milkweed	<i>Asclepias welshii</i>	Threatened	No
Winkler cactus	<i>Pediocactus winkleri</i>	Threatened	No
Wright fishhook cactus	<i>Sclerocactus wrightiae</i>	Endangered	No
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	Threatened	No

Allen's big-eared bat (*Idionycteris phyllotis*) - “The Allen’s big-eared bat is one of the most poorly known bat species in North America. It was not discovered in the United States until 1955, and it was not known from Utah until 1969. The species is rare in Utah, occurring only in the southern portion of the state. It is included on the Utah Sensitive Species List. Preferred habitats for the species include rocky and riparian areas in woodland and scrubland regions. Little is known about the breeding activity of the species, but females have been found with single young during the late spring and early summer. Allen's big-eared bat is an insectivore, eating insects captured in flight or plucked from vegetation. The species is nocturnal, roosting in caves or rock crevices during the day (UDWR. 2008a).”

Autumn buttercup (*Ranunculus aestivalis*) -The Autumn buttercup was listed as endangered on July 21, 1989. The species has been given a recovery priority of 6. This indicates the plant is a subspecies with a high degree of threat and low recovery potential. The Autumn buttercup occurs on the Utah Plateau Section of the Colorado Plateau. The species is located on small mounds along margins of wet meadows and have been known to occur in and around Utah prairie dog habitat. The known population grows on an east facing slope of the upper Sevier River Valley bottom at an elevation of 6,440 feet.

The Autumn buttercup is a herbaceous perennial that grows 1-2 feet tall. Flowering and fruiting occurs in July. Several bees, wasps and flies help pollinate the species. Seeds are dispersed within a close proximity of the plants. The seeds will only germinate after cold temperature treatments (1991, USFWS). The species is known to be palatable to livestock and wildlife. Several threats include drought, livestock and wildlife grazing. Trampling of plants and habitat by livestock and wildlife also poses a threat. In 1991, known plants were fenced or covered with cages.

Big free-tailed bat (*Nyctinomops macrotis*) - “The big free-tailed bat occurs in the western United States, as well as in much of Latin America. The species is rare in Utah, occurring primarily in the southern half of the state, although individuals may rarely occur in northern Utah. The big free-tailed bat is included on the Utah Sensitive Species List. The big free-tailed bat prefers rocky and woodland habitats, where roosting occurs in caves, mines, old buildings, and rock crevices. The species is typically active year-round, spending summers in temperate North America and migrating to warmer areas

in North America and South America for the winter. Big free-tailed bats eat insects, primarily moths. Females may give birth to a single offspring during late spring or early summer each year(UDWR. 2008b).”

Burrowing owl (*Speotyto cunicularia*) - Burrowing owls depend largely upon prairie dog tunnels for nesting. They are common residents around Utah farms and bordering towns and roads. Burrowing owls are the only small owl that habitually perches on the ground. They are 9 to 11 inches in length. It has very long, sparsely feathered legs, a short tail and round head with no ear tufts. The eyes are yellow. These owls are pale brown with light colored spots above and whitish barred spots below. They bob and bow from their perch on the ground and occasionally flip themselves (Utah Division of Wildlife Resources, 1973). When it feels threatened, the burrowing owl may hiss and sound ominously like a rattlesnake (Jackson, J, 1990).

California condor (*Gymnogyps californianus*) – The California condor was listed as endangered on March 11, 1967 (32 FR 4001). In Utah, South of I-70, the California condor is an experimental nonessential population. North of I-70, the California condor is listed as an endangered species. California condors are among the largest flying birds in the world (U.S. Fish and Wildlife Service 1996; 61 FR 54043). California condors remain one of the world’s rarest and most imperiled vertebrate species (Cooper 1890; Koford 1953; Wilbur 1978) with California being listed as the only critical habitat. Over the last century, populations declined (due to lead poisoning, cyanide poisoning, shooting, and DDT contamination) to the point that the few remaining birds were captured for captive breeding efforts in the 1980s. The California condor may occur throughout Southern Utah in a variety of habitats in Southern Utah. California condors prefer mountainous country at low and moderate elevations, especially rocky and brushy areas near cliffs. Condors roost in snags, tall open-branched trees, or cliffs, often near important foraging grounds. California condors eat carrion, usually feeding on large items such as dead sheep, cattle, and deer. California condors are not likely to roost and nest near Utah prairie dog locations due to the lack of necessary habitat. However, transient stop-over visits may occur within Utah prairie dog populations and habitat.

Ferruginous hawk (*Buteo regalis*) - Ferruginous hawks which have been known to occur in Utah prairie dog habitat are the largest of the North American Buteo hawks, with a body length of 22-25 inches and a wingspan of up to 5 feet. The typical adult is brown above and primarily cinnamon-rufous in color underneath. The tail is white and black interspersed throughout. They display two color phases, a light phase and a melanistic or dark phase, which is more common. The beak is bluish black and the eyes are yellow. The most common nesting is in pinyon-juniper communities but has also been found in cedars, limber pine, willow trees, cottonwoods, sagebrush, and swamp oaks. The trees chosen are frequently isolated and often in the transition zone to the adjacent community. The nests are located six to ten feet above the ground (BLM 1978).

In 20 studies ferruginous hawks ate primarily mammals (95.4% by biomass; 83.3% by frequency in a sample of 6,203 prey items); cottontail rabbit, jackrabbits, ground squirrels, prairie dogs, pocket gophers, and kangaroo rats

were particularly important in the diets studied. Birds consisted of only 4.1% of the overall diet. The remainder of the diet was comprised of 0.5% amphibians and reptiles and a trace of insects (Olendorff 1993).

Fringed myotis (*Myotis thysanodes*) -“The fringed myotis is a small bat that occurs in most of the western United States, as well as in much of Mexico and part of southwestern Canada. The species is widely distributed throughout Utah, but is not very common in the state. The fringed myotis inhabits caves, mines, and buildings, most often in desert and woodland areas. The species commonly occurs in colonies of several hundred individuals. Females generally give birth to a single offspring during the summer. Beetles, which are plucked from vegetation or the ground, are the major prey item of the fringed myotis. Because the fringed myotis flies so close to rocks and thick vegetation, its wings are particularly strong and puncture resistant. The species is nocturnal, and individuals hibernate during the cold winter months. The fringed myotis is brown in color, with a characteristic fringe of stiff hairs along the edge of the tail membrane(UDWR. 2008c).”

Utah prairie dog (*Cynomys parvidens*) – The Utah prairie dog was once widely distributed throughout South-Central Utah. The Utah prairie dog now occurs in the southwestern part of the state. The species is not found anywhere else in the world, making it the only non-fish vertebrate endemic to Utah (Biological and Conservation Database 2002). The Utah prairie dog was listed as an endangered species in 1973 and it has been federally listed as a threatened species since 1984 (USFWS 1973, 1984,1991). Utah prairie dogs live in groups or families. The species forms colonies and spend much of its time in underground burrows, often hibernating in the winter.

The species breeds in the spring, and young can be seen above ground in early June. The Utah prairie dog diet is composed of flowers, seeds, grasses, leaves, and insects (Biological and Conservation Database 2002). Predators include badgers, weasels, ferrets, coyotes, bobcats, foxes, hawks, man, eagles, and some snakes. Threats to the species include intentional poisoning, shooting, diseases such as plague, habitat loss and degraded habitat quality, and environmental conditions such as vegetation changes and drought (Crocker-Bedford 1975; Stoddart *et al.* 1975; Collier and Spillett 1975; U.S. Fish and Wildlife Service 1991). Factors leading to degraded habitat quality arise from landownership and management practices, including overgrazing and fire suppression. Overgrazing has lead to vegetation changes from grass to shrub; erosion of the swales that were historically occupied by Utah prairie dogs; and lowered water tables which in turn reduces the amount of moisture available for palatable grasses and forbs that supply summer food for Utah prairie dogs (Crocker-Bedford 1975). Habitat loss and poor habitat quality are immediate concerns for the remaining Utah prairie dogs. Most of the species distribution occurs on private lands which are or will be largely developed for agricultural production or housing (USFWS, 1991).

Greater sage-grouse (*Centrocercus urophasianus*) - The greater sage-grouse which has been known to occur in Utah prairie dog habitat was petitioned for federal listing under the ESA, with the USFWS receiving three petitions. In January 2005, the USFWS completed its status review of the greater sage-grouse throughout its range and determined that the species does not warrant

listing under the ESA at this time (70 FR 2244, January 15, 2005). In February of 2008, the Service initiated a new status review to take into consideration relevant new information that has become available since its 2005 finding that the greater sage-grouse did not require protection under the ESA. The final review is expected in late 2008 (73 FR, 10218, February 26, 2008). Greater sage-grouse are found throughout many western and northwestern states. Greater sage-grouse have black and brown spotted feathers on body and tail feathers. They also have a large amount of white feathers surrounding the neck area. Habitat consists of large expanses of sagebrush cover, particularly big sagebrush, and wet meadows (UDWR 2003). Sage grouse populations are migratory, have large annual ranges, and use different habitats at different times of the year.

Threats on the greater sage-grouse include urban expansion; conversion of native habitat into agricultural lands; establishment of invasive, non-native plants (e.g., cheatgrass); some logging in areas, altered fire cycles (large expanses of sagebrush habitat being converted to non-native grassland); and overgrazing by livestock (UDWR 2003). Nest predators also threaten the species.

Pygmy rabbit (*Brachylagus idahoensis*) - The pygmy rabbit which has been known to occur within Utah prairie dog habitat, has been petitioned to be listed under the Endangered Species Act (ESA) as threatened or endangered. In December 2008, the Service issued a substantial 90-day finding and initiated a 12-month status review of the species. Pygmy rabbits are the smallest of all North American rabbits and are half the mass of a mountain cottontail. They are easily confused with juvenile cottontails, but distinguished from all rabbit species in Utah by the uniform brown coloration of its tail. Pygmy rabbit ears are also shorter and more rounded than cottontail ears. Pygmy rabbits are the only true burrowing rabbit. Landscape selection by rabbits is linked very closely with the availability of deep, loose soils in which to construct burrows. The primary cause of mortality is predation.

Spotted bat (*Euderma maculatum*) - “The spotted bat occurs throughout much of the western United States, as well as in southwestern Canada and northern and central Mexico. Spotted bats occur state-wide in Utah, but have probably never been abundant in any particular location. Unfortunately, current data suggest that the species may be becoming even more rare in Utah than it was in the past. Consequently, the spotted bat is included on the Utah Sensitive Species List.

Spotted bats may be found in a variety of habitats, ranging from deserts to forested mountains; they roost and hibernate in caves and rock crevices. Females generally give birth to a single young in late spring. Spotted bats eat insects, primarily moths, which are usually captured in flight. Similar to Utah's other bat species, the spotted bat is nocturnal (UDWR. 2008d).”

Townsend's big-eared bat (*Corynorhinus townsendii*) - “The Townsend's big-eared bat occurs in western North America, from southwestern Canada to Mexico. Isolated populations of the species also occur in areas of the central and eastern United States. The species occurs state-wide in Utah at elevations below 9,000 feet. Unfortunately, Townsend's big-eared bat populations in Utah

are thought to be declining, and the species is therefore included on the Utah Sensitive Species List.

Townsend's big-eared bat can occur in many types of habitat, but the species is often found near forested areas. Caves, mines, and buildings are used for day roosting and winter hibernation. Consequently, human disturbances of caves and the closures of abandoned mines may constitute threats to the species.

Females congregate into nursery colonies and typically give birth to one young each year. Townsend's big-eared bats eat flying insects, particularly moths, and individuals are often seen foraging near trees. The species is nocturnal, and individuals typically do not leave their roosts until well after sunset (UDWR. 2008d).”

3.5 Wetlands

Natural wetlands included within the seven county area of the Programmatic Agreement are much reduced from historical accounts of the area. Most wetlands are small and centered around small isolated springs or along the margins of small streams or rivers. Current impacts from surface disturbing activities in jurisdictional wetlands within the covered area are regulated through the U.S. Army Corps of Engineers. Utah prairie dog habitat typically is located in upland areas and is not likely to overlap with wetland areas.

3.6 Geology/Soils

Potential sites covered under the Programmatic Agreement can vary widely in the type and quality of geology/soil types. Soil characteristics are an important factor in the location of Utah prairie dogs, since well-drained soil is necessary for their burrows. Utah prairie dogs need soils that can retain shape to avoid burrow collapse. Prairie dogs require the soil to be deep enough to provide protection from predators and insulation from temperature extremes. The burrows are typically 3.3 feet (one meter) deep underground and remain dry (USFWS 1991a). However, burrows of the Utah prairie dog have also been reported as being up to approximately 10 feet in depth (McDonald 1993). Soil color may provide additional protection from predators by camouflaging the prairie dogs (Collier 1975, Turner 1979).

Some ongoing agricultural activities such as tilling, plowing, fencing, and seeding have resulted in minor soil erosion and ground disturbance in likely Utah prairie dog habitat.

3.7 Land Use

The land use within South-Central Utah varies greatly. Land uses range from industrial centers and residential areas to agricultural and livestock operations. Sites eligible for participation in the Programmatic Agreement will be on agricultural farmland and open rangeland. Major land uses on potential sites for

the Programmatic Agreement in South-Central Utah include range, alfalfa and grass hay, corn and small grain crops, and hog production.

3.8 Air Quality

The most recent UDAQ Statewide Emissions Inventory Report shows that the primary air pollutant in South-Central Utah is volatile organic compounds (VOC), followed by carbon monoxide (CO), PM10, nitrogen oxides (NOx), sulfur oxides (SOx), and PM2.5. The greatest sources of air pollution emissions in South-Central Utah include vehicle emissions, gas stations, and wood burning stoves. (Utah Division of Air Quality 2006)

The air quality within South-Central Utah is expected to remain unchanged, as it is typical of undeveloped regions in the Western United States. Limited data collected in areas indicate that ambient pollutant levels are usually near or below measurable limits (Utah Division of Air Quality 2006).

Only minor localized affects to air quality are expected to continue from ongoing agricultural equipment operation and associated activities (i.e., application of chemicals, burning of ditches and fence lines). Any surface disturbing activities may increase localized dust levels. Spray drift (movement of chemicals in the air to unintended locations) and volatilization (the evaporation of liquid to gas) of applied chemicals temporarily results in chemical particles in the air, which can be inhaled and deposited on skin or plant surfaces and affect humans, wildlife, and non-target plants. Chemical particles can also be transported away from the target location, depending on weather conditions and application method.

3.9 Water Resources

Water is an important resource throughout the proposed project area and includes both surface and ground water. Much of the water in the streams and rivers is diverted for agricultural uses and some for municipal water-system use. Water resources in the covered area also include groundwater that is pumped for agricultural, residential, municipal, and industrial use. Many things affect water resources including precipitation, topography, agriculture, vegetation cover, and general land use practices.

3.10 Cultural Resources

Both prehistoric and historical cultural resources are distributed throughout South-Central Utah. The area of potential coverage is large enough to assume that cultural resources are within the covered area of the Programmatic Agreement.

Activities associated with existing farming and livestock ranching that do not disturb soil typically do not impact cultural resources. However, any construction work or habitat modifications related to farming, ranching, and fencing that disturb soil potentially impact cultural resources. As most of the agricultural activities have resulted in ongoing ground disturbance, any additional affects to cultural or historic resources are likely to be minor. Though located on private lands, construction and disturbance activities associated with the Programmatic Agreement utilizing state or federal funding require review for potential impact to historical properties under the Utah State Antiquities Act (UCA 9-8-404), Section 106 of the National Historic Preservation Act (NHPA), and the subsequent

regulations for the Protection of Historic Properties established in 36CFR 800 as appropriate. By complying with State and federal law, impacts to cultural resources as a result of the proposed activities will be negligible.

3.11 Socio-economic Environment

Within the counties included in the Safe Harbor Agreement area, agriculture has traditionally played—and continues to play—an important role in local history, culture, and social structures. From an economic standpoint, however, agriculture has lost a great deal of its prominence in the region. In 2005, 4.3% of income-earning jobs were held by farm proprietors in the seven-county area. The makeup of economic activity in the area is very diverse with the largest sectors being accommodation and food services, educational services, retail trade, construction, and manufacturing. Agriculture and related industries (including forestry, fishing, and hunting) contribute 6.3% of total employment in the effected area as compared to the U.S. as a whole, in which these industries only constitute 1.5% of employment.

Of all farming or ranching income in the region, approximately 80% comes from livestock and livestock-related products. Beginning in about 1995, there was a sharp increase in the importance of the livestock component in total agricultural income. Within the effected area, annual livestock-based income grew from approximately \$125 million per year in 1995 to \$340 million by 2004.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Alternative A-No Action Alternative

4.1.1 Vegetation

There is expected to be no change in the current impacts on vegetation communities under the No Action Alternative. With this alternative, the Utah prairie dog is typically not considered in vegetation management decisions. The management of vegetation on private lands would continue to be at the discretion of the private landowner. Major changes in current vegetation types is not expected. Any Utah prairie dog habitat improvements would likely be incidental.

4.1.2 Wildlife

No change in the current impacts to wildlife, as described in section 3.3 above, is expected under this alternative. Conservation of the Utah prairie dog on non-federal lands would not normally be part of the considerations in private landowner's management of existing wildlife within the seven county area.

4.1.3 Endangered and Threatened and Candidate species

No change in the current impacts to endangered, threatened, candidate, and state species of concern, as described in section 3.4, is expected under this alternative. The conservation of endangered, threatened, candidate, and state species of concern would not normally be part of the considerations in private landowner's management of existing wildlife and plant species within the seven county area.

Due to fear of regulatory restrictions on land use and management activities, some landowners may purposely manage their lands to make them unattractive to listed species. Coordinated efforts to conserve and manage Utah prairie dogs on private lands would not occur. Conservation of the Utah prairie dog would continue on federal lands consistent with ESA section 7 consultation activities.

4.1.4 Wetlands

No change in the current impacts to wetlands, as described in section 3.5, is expected under this alternative. Conservation of the Utah prairie dog on non-federal lands would not normally be part of the considerations in private landowner's management of existing wetlands within the seven county area.

4.1.5 Geology/Soils

There is expected to be no change in the current impacts on geology/soils under the No Action Alternative. With this alternative, the Utah prairie dog is typically not considered in geology/soil management decisions. The management of geology/soil on private lands would continue to be at the discretion of the private landowner. Any Utah prairie dog habitat protection would likely be incidental.

4.1.6 Land Use

No change in the current impacts to land use, as described in section 3.7, is expected under this alternative. Conservation of the Utah prairie dog on non-federal lands would not necessarily be part of the considerations in any existing land use. Any protection of habitat for the Utah prairie dog would likely be incidental to existing land uses.

4.1.7 Air Quality

No change in the current impacts to air quality, as described in section 3.8, is expected under this alternative. Conservation of the Utah prairie dog on non-federal lands would not normally be part of the considerations in private landowner's management of air quality within the seven county area.

4.1.8 Water Resources

No change in the current impacts to water resources, as described in section 3.9, is expected under this alternative. Conservation of the Utah prairie dog on non-federal lands would not necessarily be part of the considerations in any management of existing water resources.

4.1.9 Cultural Resources

No change in the current impacts to cultural resources, as described in section 3.10, is expected under this alternative. Conservation of the Utah prairie dog habitat on non-federal lands would not necessarily be part of the considerations in the management of cultural resources within the covered area and would be incidental to existing land uses or through the desires of individual landowners. Under this alternative, further review of impacts to historical properties is not required under State and federal law since there will be no involvement of State or federal funding.

4.1.10 Socio-economic Environment

No change in socio-economic conditions is expected under this alternative. The result of implementing the No Action Alternative would be to continue the current circumstances in which producers have no assurance that protecting Utah prairie dog habitat will not result in the realization of future economic losses due to endangered species protection laws. This uncertainty will, in turn, eliminate any incentive for landowners to actively protect habitat or animals found within their land-ownership boundaries. Implementing this alternative would perpetuate the existing circumstance in which the options available to landowners for addressing issues related to the Utah prairie dog are very limited and which discourage cooperation on the part of landowners.

4.1.11 Cumulative Effects

Cumulative impacts are impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions. With this alternative current impacts to the existing environment within the covered area are anticipated to continue.

4.2 Alternative B-Preferred Alternative

4.2.1 Vegetation

Potential sites proposed by future participants under the Programmatic Agreement can vary widely in the quantity and quality of vegetation. The management actions of sites resulting from enrollment under the Programmatic Agreement could decrease shrub cover, increase plant diversity, decrease noxious weeds, and increase forage availability. As localized Utah prairie dog colonies increase in response to restoration activities, a return to historic disturbance regimes can be expected from Utah prairie dogs digging additional burrows. Habitat manipulations such as mechanical treatments, prescribed burning, herbicide use, and irrigation improvements would result in short-term disturbance of vegetation and potential conversion of sagebrush vegetation communities into grasslands. Vegetation management actions included in the Programmatic Agreement that are designed to benefit Utah prairie dog include the following:

- Limit the use of pesticides and herbicides within 100 feet of active prairie dog burrows to those included on a list of USFWS-approved chemicals.
- Prescribed grazing to increase visual surveillance, increase forage quantity and quality, and deferment or rest to create vegetative barriers to limit expansion to undesirable locations, and/or
- Brush management to restore plant community balance, increase visual surveillance, and increase forage quantity and quality, and/or
- Seeding to restore degraded rangelands or pasturelands and bare ground, and increase forage quantity and quality, and/or,
- Prescribed burning to increase forage quantity and quality, and/or,
- Noxious weed control to facilitate restoration of rangelands or pasturelands, increase visual surveillance, and increase forage quantity and quality.

- **Irrigation improvements and control to reduce the chance of burrow flooding, and increase forage quantity and quality, and increase access to moist vegetation.**
- **Plant vegetative barriers, such as, windbreaks, shelterbelts, or rows of tall grasses and shrubs to manage dispersal of prairie dogs into sensitive areas identified in Exhibit A of the Programmatic Agreement thereby minimizing the need for future control of prairie dogs.**

Mechanical treatments

Mechanical treatments include the use of machinery to remove shrubs and the use of machinery to seed an area. Mechanical treatments will be planned to benefit native vegetation. Treatments may injure or kill individual plants within a treated area which will likely result in decreased shrub cover at these sites. However, mechanical treatments can be selective and avoid non-target plants within the project area. Seeding of individual sites within the project area will enhance forage for the Utah prairie dog. Seeding could be accomplished by drilling or a spreader, and could cause temporary ground disturbance. However long term effects are expected to provide greater plant diversity and ground cover. The mechanical treatments would restore plant community balance, restore degraded rangelands or pasturelands and bare ground, and increase forage quantity and quality.

Prescribed burning

Prescribed burning may be used to manipulate vegetation in limited circumstances. Prescribed burning could kill or injure some plants which will likely result in decreased vegetative cover at these sites. Fire can also stimulate the growth of other plants. Direct short term impacts to plant individuals or potentially suitable habitat could also occur from human and equipment activity. The construction of fire lines using hand tools and heavy machinery could result in temporary population segmentation and the alteration of habitat. All federal funding programs associated with prescribed burning are carried out under controlled environments including specific weather conditions and fire response plans.

Long-term benefits expected from prescribed burns include reduced shrub encroachment and the establishment of a more natural fire regime, and reduced risk for a large catastrophic fire event.

Chemical herbicide

Approved herbicides will be used to control noxious weeds and may be used to manipulate vegetative cover, particularly shrubs. The limited use of approved chemicals will kill or injure some plants will likely result in decreased shrub or vegetative cover at these sites. Long term benefits are anticipated to herbaceous vegetation communities.

Irrigation improvements

Irrigation improvements and control will increase vegetation quantity and quality.

4.2.2 Wildlife

Species that depend on dense shrub cover such as the pygmy rabbit could be negatively impacted. However, individual projects will be planned to avoid and minimize adverse effects on shrub dependent species. The beneficial effects of increased plant diversity, particularly grasses and forbs, may benefit wildlife as a result of implementation of the Preferred Alternative. Modification of existing habitat is likely to increase forage and habitat diversity.

Reestablishment of the Utah prairie dog at existing or new grassland sites would likely result in a small increase in local biodiversity by providing additional prey for some wildlife species at these locations. Increases in Utah prairie dog populations will benefit burrowing owls (a state of Utah sensitive species), weasels, badgers and snakes which have been known to use the prairie dog burrows for shelter and prey.

Using prescribed burning to restore habitat conditions would result in long-term, positive effects to wildlife by reducing the risk of catastrophic wildland fires and improving potentially suitable habitat. Smoke and fire associated with prescribed burns could directly affect wildlife and their young through harassment, displacement, or potential injury. Prescribed burning actions could affect wildlife and cause immediate post-fire alteration, damage, or destruction of occupied or suitable habitat. These activities would reduce forage and cover availability. Any negative effects would generally be short-term, ending when or shortly after the suppression actions are concluded. In addition, adverse effects would be minimized by conducting prescribed burns outside sensitive life stages such as breeding or juvenile rearing.

Mechanical habitat manipulations such as seeding will restore degraded rangelands or pasturelands and bare ground, and increase forage quantity and quality. Human disturbance and noise associated with the use of heavy equipment may temporarily disperse wildlife from occupied habitats. Adverse effects would be minimized by implementing mechanical treatments outside sensitive life stages such as breeding or juvenile rearing.

Spray drift (movement of chemicals in the air to unintended locations) and volatilization (the evaporation of liquid to gas) of applied chemicals temporarily results in chemical particles in the air, which can be inhaled and deposited on skin or plant surfaces and wildlife. All chemicals will be applied in accordance with state and federal regulations and label instructions.

Irrigation improvements are expected to increase forage quantity and quality, and increase access to moist vegetation for wildlife.

4.2.3 Endangered, Threatened , Candidate and Sensitive species

Autumn buttercup

Autumn buttercup plant populations have been known to occur within the range of the Utah prairie dog and may be affected by the Preferred Alternative.

Negative impacts may result from mechanical, chemical or prescribed burning vegetation treatments. These activities could result in the mortality of individual plants and reduction of viable habitat.

Typically, autumn buttercup occurs in moist soils. Vegetative treatments identified in the Preferred Alternative are not expected to be necessary in moist soil habitats. Therefore, negative impacts to this species will be avoided by not applying these vegetation treatments in autumn buttercup habitat.

Burrowing owl

Activities related to the modification of existing habitat such as managed grazing, brush management, controlled burns, seeding, fencing, limited use of herbicides and improved irrigation practices, have the potential to both positively and negatively impact burrowing owl. Activities resulting from the Preferred Alternative may result in loss or reduced quantity and quality of forage and cover habitat in the sagebrush habitat that supports burrowing owl. These activities could also reduce forage availability, damage or destroy burrows, and remove the sagebrush shrubs that provide above-ground vegetative cover.

Damage to burrows may occur as a result of using heavy equipment for reseeding or mechanical removal of undesirable vegetation. Increased human presence may alter burrowing owl behavior reducing the amount of time available for the species to forage and causing an unnecessary expenditure of energy in fleeing.

Limited chemical treatments and weed spraying have the potential to cause direct mortality due to exposure to overspray or chemical drift. Chemical vegetation treatments also have the potential to reduce available forage for the species in the event of drift or overspray.

Prescribed burning used to retain or improve range condition and maintain lower fuel loads could potentially negatively affect burrowing owl from smoke, fire, noise, or other human-related disturbances that may result in harassment, displacement, injury, or possible mortality; or immediate post-project alteration of key habitat components (e.g., forage or vegetative cover) or owl from surface-disturbing activities. Prescribed burning activities may temporarily reduce forage availability, damage, or destroy burrows and/or owls.

Irrigation improvements and control to reduce the chance of burrow flooding will increase forage quantity and quality.

California condor

California condors are not likely to roost or nest within suitable habitat for Utah prairie dog. However, California condors may briefly stop within Utah prairie dog habitat to feed on carrion. Improved habitat conditions for Utah prairie dog and other wildlife may incidentally benefit California condors. Increased populations of native wildlife may result in greater feeding opportunities for California condor.

Ferruginous hawk

Long-term beneficial impacts to the ferruginous hawk may result from vegetation treatments and reseeding. Increased human presence during habitat modification projects may slightly alter ferruginous hawk behavior, for short durations.

Limited chemical treatments have the potential to cause direct mortality due to exposure to overspray or chemical drift. Chemical vegetation treatments may also

reduce available forage for the species potential prey in the event of drift or overspray.

Smoke and fire associated with prescribed burning could potentially directly affect ferruginous hawk and their young by harassment, displacement, or potential injury. Prescribed burning could also result in loss or reduced quantity and quality of breeding, and cover habitat for ferruginous hawk. These activities could reduce cover availability, and damage nests.

Using prescribed burning to reduce fuel loads and restore habitat conditions in sagebrush habitat within the range of the species may result in long-term, positive effects to the ferruginous hawk by reducing the risk of catastrophic wildland fires and improving potentially suitable habitat for the species.

Greater sage-grouse

Long-term beneficial impacts to the greater sage-grouse may result from vegetation treatments and reseeding. Increased human presence during habitat modification projects may slightly alter greater sage-grouse behavior, for short durations.

Limited chemical treatments have the potential to cause direct mortality due to exposure to overspray or chemical drift. Chemical vegetation treatments also have the potential to reduce available forage for the species in the event of drift or overspray.

Smoke and fire associated with prescribed burning could potentially directly affect sage grouse and their young by harassment, displacement, or potential injury. Prescribed burning could consume the leaves and other forage for greater sage grouse, and the sagebrush shrubs that provide vegetative cover. Prescribed burning could also result in loss or reduced quantity and quality of breeding, forage, and cover habitat in the sagebrush habitats that support greater sage grouse. These activities could reduce forage and cover availability, and damage nests.

Using prescribed burning to reduce fuel loads and restore habitat conditions in sagebrush habitat within the range of the species may result in long-term, positive effects to the greater sage grouse by reducing the risk of catastrophic wildland fires and improving potentially suitable habitat for the species.

Pygmy rabbit

Activities related to the modification of existing habitat such as managed grazing, brush management, controlled burns, seeding, fencing, limited use of herbicides and improved irrigation practices, have the potential to both positively and negatively impact pygmy rabbit. Activities resulting from the Preferred Alternative may result in loss or reduced quantity and quality of forage and cover habitat in the sagebrush habitat that supports pygmy rabbits. These activities could also reduce forage availability, damage or destroy burrows, and remove the sagebrush shrubs that provide above-ground vegetative cover.

Damage to burrows may occur as a result of using heavy equipment for reseeding or mechanical removal of undesirable vegetation. Increased human presence may

alter pygmy rabbit behavior reducing the amount of time available for the species to forage and causing an unnecessary expenditure of energy in fleeing.

Limited chemical treatments and weed spraying have the potential to cause direct mortality due to exposure to overspray or chemical drift. Chemical vegetation treatments also have the potential to reduce available forage for the species in the event of drift or overspray.

Prescribed burning used to retain or improve range condition and maintain lower fuel loads could potentially negatively affect pygmy rabbit from smoke, fire, noise, or other human-related disturbances that may result in harassment, displacement, injury, or possible mortality; or immediate post-project alteration of key habitat components (e.g., forage or vegetative cover) or rabbit from surface-disturbing activities. Prescribed burning activities may temporarily reduce forage availability, damage, or destroy burrows and/or rabbits, and remove the sagebrush and shrubs that provide above-ground vegetative cover.

Irrigation improvements and control to reduce the chance of burrow flooding will increase forage quantity and quality.

Utah bats

The Allen's big-eared bat, big free-tailed bat, fringed myotis, spotted bat, and Townsend's big-eared bat all have been known to occur in Utah prairie dog habitat . The Utah bat species are known to be nocturnal, roosting in old buildings, caves, or rock crevices during the day. However, at night Utah bats may briefly stop within Utah prairie dog habitat to feed on insects. Increases in grass and forb vegetation may result in greater insect populations and therefore greater feeding opportunities for Utah bats . Increased human presence during habitat modification projects may slightly alter Utah bat behavior, for short durations. Disturbance to bats will be minimized because projects will be implemented during daylight hours when bats are roosting.

Limited chemical treatments have the potential to cause direct mortality due to exposure to overspray or chemical drift. Chemical vegetation treatments also have the potential to reduce available forage for Utah bat prey in the event of drift or overspray.

Smoke and fire associated with prescribed burning would only incur minor effects because any prescribed burning would take place during the day when Utah bats are roosting.

Using prescribed burning to reduce fuel loads and restore habitat conditions in sagebrush habitat within the range of the Utah bat species may result in long-term, positive effects to the bats by reducing the risk of catastrophic wildland fires and improving potentially suitable foraging habitat for the species

Utah prairie dog

Improved management practices such as prescribed grazing, brush management, controlled burns, limiting use of herbicides, seeding, fencing, and improved irrigation practices would benefit the species and habitat. The Programmatic

Agreement supports recovery objective #8 listed in the current Recovery Plan for the Utah prairie dog (USFWS 1991) by developing and implementing site-specific management plans for colonies that improve areas of marginal habitat and manage factors limiting the growth of colonies.

Activities related to the modification of existing habitat as identified in the Preferred Alternative, could have short-term negative impacts, but will be offset with the long-term benefits of improved habitat quality and quantity. Short-term impacts will be minimized through appropriate conservation measures, such as timing of implementation and avoidance of active Utah prairie dog colonies.

Although incidental take and control of Utah prairie dogs may be authorized in the 10(a)(1)(A) permit, the overall outcome will be a net conservation benefit. The Programmatic Agreement will provide additional habitat for dispersing adults, potentially increasing their occupied habitat and, therefore, is expected to provide a net benefit to the species.

Damage to burrows may occur as a result of using equipment for reseeding or mechanical removal of undesirable vegetation. Increased human presence may alter Utah prairie dog behavior reducing the amount of time available for the species to forage and causing an unnecessary expenditure of energy in fleeing and alerting others.

Chemical treatments and weed spraying will be limited within 100 feet of active colonies. This management activity will minimize the exposure and potential disturbance to the Utah prairie dog. Chemical vegetation treatments also have the potential to reduce available forage, but will be minimized by targeting of noxious weed and brush species.

Prescribed burning could affect Utah prairie dogs from smoke, fire, noise, or other human-related disturbances. Prescribed burning activities may temporarily reduce forage availability, damage burrows, and remove the above-ground vegetative material. Any effects would generally be short-term, ending shortly after prescribed burning. Despite the initial loss of forage and shrub cover following prescribed burning, the fire would be expected to improve forage quality and quantity, as well as provide greater visibility for detecting predators. Adverse effects would be minimized by conducting prescribed burns outside sensitive life stages such as breeding or juvenile rearing.

Irrigation improvements and control will reduce burrow flooding, increase forage quantity and quality, and increase access to moist vegetation.

Prescribed grazing will increase visual surveillance and forage quantity and quality. Vegetative barriers may be created to limit expansion to locations where Utah prairie dogs would be controlled. Studies conducted on the effects of grazing and habitat quality on the Utah prairie dog (Ritchie and Cheng 2001), have shown strong associations between grazing season and prairie dog weight gain and reproduction. Fall or winter grazing was shown to have a positive effect on prairie dogs as compared to no grazing. Timing, frequency, intensity and duration of grazing will be specified to benefit the Utah prairie dog.

4.2.4 Wetlands

No change in the current impacts to wetlands, as described in section 3.5 is expected under the Preferred Alternative. Utah prairie dogs reside primarily in upland habitats. Therefore, no activity directly related to the Programmatic Agreement and issuance of a 10(a)(1)(A) permit are anticipated to impact wetland areas.

4.2.5 Geology/Soils

The implementation of the Preferred Alternative, is expected to result in increased habitat and Utah prairie dogs. As Utah prairie dogs increase in response to restoration activities, more ground disturbance can be expected from Utah prairie dogs digging additional burrows. Utah prairie dog activity aerates soils improving water infiltration and growing conditions for plants.

The short term disturbance to vegetation resulting from mechanical treatments, prescribed burning, and herbicide use may result in a minimal increase in erosion and sedimentation. However, long-term soil stability will be improved, and erosion reduced.

Irrigation improvements and management will increase vegetation quantity and quality and will reduce sedimentation and erosion.

4.2.6 Land Use

The Programmatic Agreement was developed to be compatible with the current land uses within the historical range of the Utah prairie dog; therefore no change in land use is expected. Agricultural activities are expected to continue. To protect existing land use activities, provisions included in the Programmatic Agreement would provide coverage for neighboring landowners that choose not to participate in the Programmatic Agreement but are affected by prairie dogs that disperse onto their property from participating landowners.

4.2.7 Air Quality

Minor localized increases in dust and emissions may occur during mechanical habitat improvement projects, but would not be appreciably increased over current air quality conditions. The air quality in these localized areas may improve over the long term due to soil stabilization resulting from improved vegetative management.

Minor affects to air quality also occur during application of herbicides. Spray drift (movement of chemicals in the air to unintended locations) and volatilization (the evaporation of liquid to gas) of applied herbicides temporarily results in chemical particles in the air, which can be inhaled and deposited on skin or plant surfaces and affect humans, wildlife, and non-target plants. Chemical particles can also be transported away from the target location, depending on weather conditions and application method. These effects will be minimized by following label directions and state and federal application regulations.

Prescribed burns could cause short term emissions of particulate matter (PM) and carbon monoxide (CO). All federal funding programs associated with prescribed

burning are carried out under controlled environments including specific weather conditions and fire response plans.

4.2.8 Water Resources

Changes in land-use management should improve or maintain vegetative structure in Utah prairie dog habitat communities. This in turn should improve soil stability and water infiltration, and slow runoff. Additionally, irrigation improvements such as the conversion of flood irrigation to sprinkler irrigation will result in conservation of water resources.

4.2.9 Cultural Resources

Most habitat manipulation activities would be part of the normal infrastructure improvements related to a livestock and agricultural operation. Therefore, the impacts from these activities are not completely associated with this alternative and may be common to all of the alternatives. It is anticipated that participants will enroll existing Utah prairie dog habitat sites, and no disturbance of cultural resources will occur.

Habitat manipulation and/or construction activities receiving state or federal funding are subject to review for cultural resources under UCA 9-8-404, Section 106 of the NHPA, and in 36CFR 800 as appropriate. These laws mandate a process of consultation to identify historic properties that may potentially be affected by State or federal undertakings, and to seek ways to avoid, minimize, or mitigate any adverse effects to historic properties prior to the expenditure of state or federal funding or any permits necessary for the completion of the work. Typically, this process involves an archival review for information on historic properties located in the vicinity of the project area, an intensive-level pedestrian inventory of the area of potential effect (APE) by an archaeologist meeting Qualification Standards of the current Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, and the preparation of a report detailing the results of the review and inventory. If no historic properties are affected as a result of the undertaking, the project may proceed as planned. If it is found that historic properties will be affected as a result of the undertaking, state and federal law mandates that consultation occur among appropriate consulting parties (i.e., the Utah SHPO, Native American Tribes, local groups, etc.) to resolve adverse affects.

It is anticipated that adverse effects to historic properties as a result of a section 10(a)(1)(A) permit and acceptance of the Programmatic Agreement are unlikely to occur under the Preferred Alternative since historic properties will be identified in advance of undertakings that would result in additional ground disturbance beyond the normal agriculture activities by following the processes outlined by state and federal law. Under the Preferred Alternative, all activities that may adversely affect cultural resources will be better managed than if there were no state or federal agency involvement.

4.2.10 Socio-economic Environment

Agriculture is expected to maintain its current status as a source of income for people living in the project area. Agricultural operators, however, may benefit

from funding provided under the Preferred Alternative. Furthermore, ESA regulatory assurances given to non-federal landowners through the Programmatic Agreement would be available to participants in the program, which would encourage protection of Utah prairie dogs and prairie dog habitat. The additional funding and assurances may decrease pressure to sell and/or develop land. This decrease in pressure to sell or develop could be beneficial to Utah prairie dog habitat and populations.

4.2.11 Cumulative Effects

Cumulative impacts are impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions. Lands eligible to participate in the Preferred Alternative are all privately owned and used for agriculture. It is assumed that present agriculture impacts would continue into the future unless eligible lands choose not to participate and are developed for housing, commercial or industrial uses. It is anticipated that some of the conservation measures identified in the Preferred Alternative may occur without participation in the Programmatic Agreement as they are part of normal improvements to agricultural lands but would proceed without benefits to Utah prairie dogs or assurances for private landowners.

4.3 Alternative C-Individual Permits

Environmental consequences under Alternative C are expected to be similar to those identified and described in the Preferred Alternative. Both beneficial and adverse consequences, however, will be reduced due to decreased participation of landowners.

Under Alternative C, private landowners who want the ESA regulatory assurances associated with an Individual Safe Harbor Agreement would incur additional cost to develop the documents necessary to obtain the 10(a)(1)(A) permit. The permitting process is complex and help from a professional biologist would likely be needed. With this alternative the landowner may become discouraged with the complexity and time associated with the permitting process. Landowners would be responsible for monitoring and reporting required by USFWS. State and federal agency resource limitations may also prevent the promotion and development of Individual Agreements in a timely manner to provide conservation benefits to the species. To date only five Individual Agreements have been approved and corresponding 10(a)(1)(A) permits issued by USFWS taking anywhere from one to three years. Therefore, this alternative will lead to fewer cooperators participating resulting in less habitat and conservation measures for the species.

5.0 CONSULTATION AND COORDINATION WITH OTHERS

5.1 Participating partners

- 1. Color Country Resource Conservation and Development Council, Inc.**
- 2. Environmental Defense Fund**
- 3. Panoramaland Resource Conservation and Development Council, Inc.**
- 4. USDA Natural Resources Conservation Service**
- 5. United States Fish and Wildlife Service**
- 6. Utah State University Cooperative Extension**
- 7. Utah Farm Bureau Federation**
- 8. Utah Division of Wildlife Resources**

5.2 Document preparer and contacts

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- 4. Linda Lind, Coordinator, Panoramaland Resource Conservation and Development Council, Inc.**

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7.0 Appendices

Appendix A: Programmatic Safe Harbor Agreement for the Utah Prairie Dog