

**“Why Don’t We Just Shoot Them?”
An Institutional Analysis of Prairie Dog Protection in Iron County, Utah**

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I. INTRODUCTION

The protection of natural resources presents a rich study area for institutional analysis. Years of research has demonstrated that individuals, groups, and government organizations can create institutions which promote the long term survival of a resource. Institutional analysts suggest that such rules will be created or changed only when individuals perceive greater benefits than costs in so doing (Ostrom 1999).

This paper examines local policies managing the Utah prairie dogs in Iron County, Utah. The Utah prairie dog has been protected by the federal Endangered Species Act (ESA) since 1973. Iron County contains a significant Utah prairie dog population living on private, and to a lesser extent, government property. While all property containing prairie dog habitat is entitled to federal protection, the local Iron County government took the additional step in 1998 of creating a Habitat Conservation Plan (HCP) under Section 10 of the ESA to undertake local management the species.

On its face, the creation of local institutions to manage prairie dogs is a confusing outcome in light of local sentiment toward the species. Prairie dogs are not beloved features of the County to most human residents there. It seems the most common local response to questions of prairie dog management is “why don’t we just shoot them?”¹ In

¹ I worked in Iron County as a Deputy County Attorney for two years. As part of my responsibilities with the County, I attended all Planning and Zoning Meetings and most County Commission Meetings. The question of shooting the prairie dogs was raised every time prairie dogs were discussed. Sometimes the comment was made in jest. At other times numerous citizens seriously questioned they couldn’t just shoot the dogs.

viewing this response, why would local elected officials decide to create institutions to locally manage the species?

This paper uses the Institutional Analysis and Development (I.A.D.) framework to answer that question. The I.A.D. framework asserts that at the center of any organized human endeavor there are individuals which interact with action situations within an action arena. The action situation can be characterized by variables including, “participants, positions, potential outcomes, action-outcome linkages, the control that participants exercise, types of information generated, and the costs and benefits assigned to actions and outcomes”² (Ostrom 2005 14)). The structure of the action arena is determined by a number of exogenous variables including, biophysical/material conditions, attributes of the community, and the rules-in-use, as opposed to rules on paper only. In order to understand the outcomes achieved, one must understand these variables and the incentives they create for the individual decision makers (Ostrom 2005).

This paper views the incentives generated by the Endangered Species Act, the biophysical conditions regarding the Utah prairie dog, and the changing attributes of Iron County. In viewing these factors, it is apparent that HCP is less about prairie dogs than it is about people and politics. It is clear that the conditions of the community and resource do not create sufficient incentives to make and sustain local institutions regarding the Utah prairie dog. Instead, Iron County policy makers have created the HCP as a strategy to mitigate actions taken by the federal government through the Endangered Species Act.

Before delving into the analysis, it is important to provide an introduction to Iron County and the Utah prairie dog. Section III introduces the ESA and HCPs. Section IV presents the biophysical conditions of the prairie dog and the changing nature of Iron

² Numbering in original text deleted.

County. Section V presents an overview of the Iron County HCP and an analysis of why elected officials in Iron County acted to create it. Section VI contains conclusions and recommendations.

II. INTRODUCTION TO IRON COUNTY AND THE UTAH PRAIRIE DOG

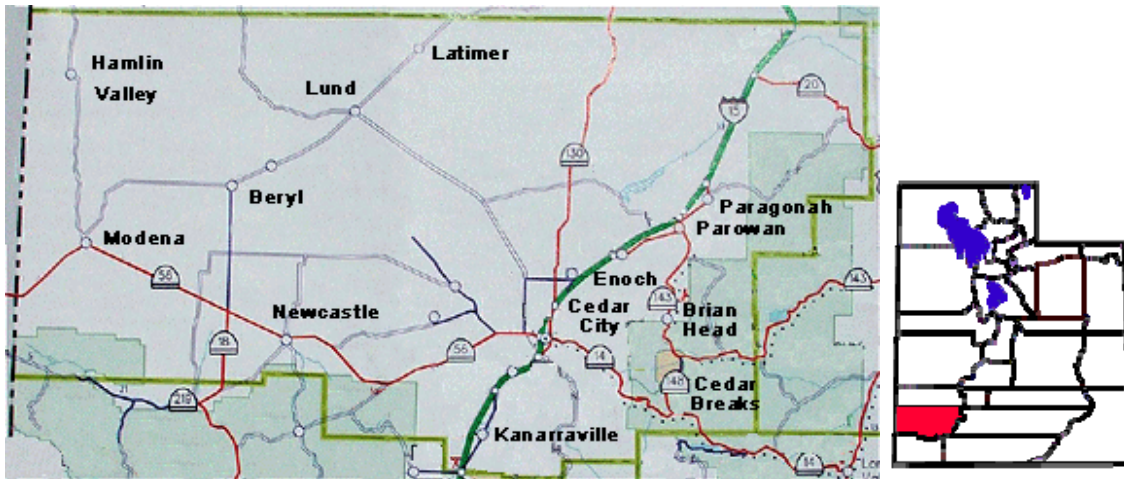
Iron County

Iron County covers 3,298 square miles in southwestern Utah on the Nevada-Utah state line (U.S. Census Bureau, 2005). Iron County ranges in altitude from 5,050 ft. to over 11,000 ft. Average rainfall is slightly over 11 inches per year (Iron County Commission, 2001). The estimated population in 2004 was 36,285. Mormon settlers colonized the area in the mid 1800s to mine iron ore from the local mountains and to farm the area's valleys. In so doing, the Mormons displaced bands of Paiute Indians who had inhabited the area for hundreds of years (Holt, 2005). Mormon settlement occurred in the eastern portion of the County, particularly the Cedar and Parowan Valleys, where there was water sufficient to maintain agriculture.

There are six incorporated cities in the County. These include Brian Head, Cedar City, Enoch, Kanarrville, Parowan, and Paragonah. The County Seat is Parowan (population 2,565), the largest population center is Cedar City, (population 20,527), and Enoch (population 3,467), located six miles north of Cedar City, is the second largest city in the County (U. S. Census Bureau, 2005). United States Interstate 15 connects the Cedar and Parowan valleys. Western Iron County is even more sparsely populated due to a lack of water. Although appearing on a map, the sites of Latimer, Lund, Beryl, Hamlin

Valley, and Modena have virtually no population.³ Figure 1 contains a map of Iron County.

Figure 1



(Utahreach.org, 2005)

The U.S. government owns 57.3 percent of the land in Iron County in holdings by the Bureau of Land Management (BLM), Forest Service, and National Park Service. The State of Utah owns an additional 6.7 percent of the land in state park and school trust lands (Governor's Office of Planning and Budget, 2005). The Iron County population is comparatively poor. The 1999 median household income for Iron County was \$33,114 over \$12,000 less than the statewide average. The median household size was 3.11 people. Despite having an unemployment rate of only 3.5 percent, 19.2 percent of the Iron County population lived below poverty line in 1999—more than double the statewide average (U.S. Census Bureau, 2005). In recent years, Iron County has experienced unprecedented population growth. Between 1990 and 2000, the County

³ Lund and Latimer are ghost towns. The entire community of Modena was recently put up for sale on ebay.

grew by an astounding 62.5 percent. Between 2000 and 2004, the County grew by another 7.4 percent (U.S. Census Bureau, 2005).

The County legislative and executive functions are performed by a three member elected County Commission. Each commissioner serves a term of office of four years. Elections are held every two years with two commission seats up for election one year and one commission seat up two years later. Because of their expertise in issues of wildlife, a great deal of the day to day management of prairie dogs is performed by Utah State Division of Wildlife Resources through a contract with the County.

The Utah Prairie Dog

The Utah Prairie Dog (*Cynomys parvidens*) inhabits the high desert grasslands of southwestern Utah. The Utah prairie dog is one of three prairie dog species found in the state and is the only mammal endemic to Utah. (Utah Division of Wildlife Resources, 2005). It is the smallest of all prairie dog species. Adults average 305 to 360 mm in length. The prairie dogs are cinnamon in color with white markings on the face and a white tail (Lie, 1999).

Prairie dogs are rodents in the squirrel family (Bonzo and Day, 2002). Like other prairie dogs, the Utah prairie dog lives in colonies. It is an adept burrower which makes extensive underground chambers and spends a great deal of time underground. The species hibernates in the winter and breeds only in the spring. Litters are born later in the spring and average between three and four pups. Survivorship during the first year is less than 50%. Because prairie dogs do not become sexually active until they are at least one

year old, less than half of offspring survive to breed. This, coupled with even greater adult mortality, causes the species to reproduce slowly (Hoogland, 2001).

Prairie dogs require certain environmental conditions. Soil must be soft enough to dig at least one meter deep without hitting water. Vegetation must be low to ensure adequate visibility for viewing approaching predators (U.S. Fish and Wildlife Service, 1991), yet there must be sufficient food sources in close proximity (Hoogland, 2001). Important food sources include grasses, flowers, seeds, and insects (Utah Division of Wildlife Resources, 2005). Because of these specific requirements, prairie dog habitat is limited to only certain areas within the species' broader range.

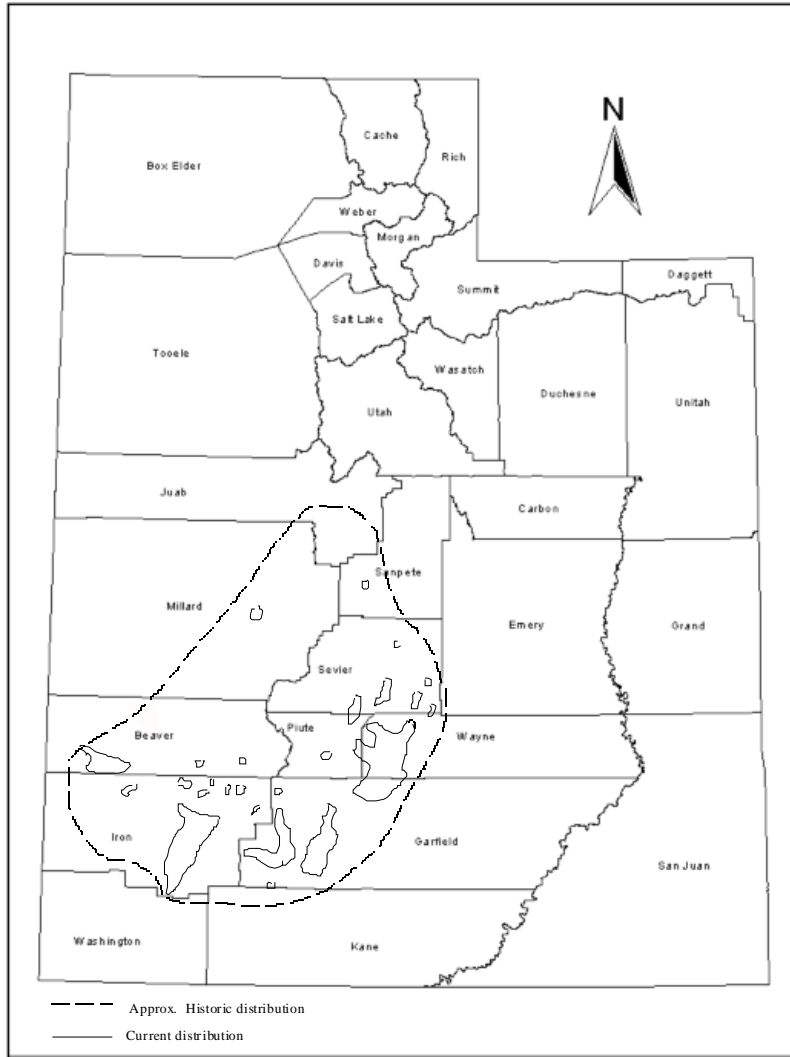
Ecologists consider all varieties of prairie dogs keystone species. A keystone species is one which has a disproportionately large impact on ecosystem structure or function. In commenting on the keystone status of the prairie dog Kotliar, et. al. state:

Although prairie dogs do not consistently increase vertebrate and plant species richness at small scales, they do locally alter species composition and increase landscape-scale diversity by affecting the abundance and distribution of dependent species. In addition, they affect a number of ecosystem-level processes that, in turn, affect landscape heterogeneity and diversity. Individually, none of these functions is particularly large, but collectively they do have a pronounced effect on ecosystem structure and function
(Kotliar, et. al., 1999)

The Utah prairie dog population experienced catastrophic decline during the last century. In the 1920s, the species' population was estimated at over 95,000 individuals. By 1972, a study by Collier and Spillet found that only 3,300 Utah prairie dogs remained in a total of only 37 colonies. The major causes of species decline included loss of habitat, an active government poisoning plan, drought, and the plague (Bonzo and Day, 2002). The prairie dog is now found in portions of only eight counties including: Beaver,

Garfield, Iron, Kane, Piute, Sanpete, Sevier, and Wayne Counties. Figure 2 shows the current and historical range of the Utah prairie dog.

Figure 2



(Source: Bonzo and Day, 2002)

In the late 1960s and early 1970s, the U.S. government took marginal steps to protect the Utah prairie dog by listing it as endangered under the then existent wildlife law. The first real protection came with the creation of the Endangered Species Act of

1973, which listed the prairie dog as endangered at the time it passed (McDonald 1993). The Utah prairie dog remained listed as endangered until May 29, 1984, when it was down-listed to threatened status by the U.S. Fish and Wildlife Service. The determination to down-list the species after U.S. Fish and Wildlife made a finding that the number of prairie dogs and colonies had substantially recovered. In fact, that same year, the U.S. Fish and Wildlife found that the prairie dogs were so plentiful in the Cedar and Parowan Valleys that they were causing significant damage to private property (Bonzo and Day, 2002). A recovery plan for delisting Utah prairie dog by the year 2000 was approved by the U.S. Fish and Wildlife Service in 1991 (U.S. Fish and Wildlife Service, 1991).

The species had not recovered sufficiently to de-list the species in 2000. In 2003, Forest Guardians, an environmental group based out of New Mexico, petitioned the U.S. Fish and Wildlife Service to re-list the Utah prairie dog as endangered.⁴ Forest Guardians argued that the plight of the Utah prairie dog was grim due to consistent habitat loss and ineffective government programs designed to protect the species (Forest Guardians, 2003). U.S. Fish and Wildlife denied the petition in 2004 and the group is currently contemplating litigation to force the reclassification.

III. THE ENDANGERED SPECIES ACT (ESA) AND HABITAT CONSERVATION PLANS

An overview of the ESA and Controlling Law

The ESA was enacted in 1973 to protect species in danger of extinction. The stated purposes of the act include “to provide a means whereby the ecosystems upon

⁴ Forest Guardians were joined in their petition by other environmental groups including the Center for Native Ecosystems, the Southern Utah Wilderness Alliance, the Escalante Wilderness Project, and the Boulder Regional Group. It is significant to note that none of these groups originates from or otherwise operates in Iron County.

which endangered species and threatened species depend may be conserved...,” and to “provide a program for the conservation of such endangered species and threatened species” (ESA § 2(b)).

Section 4 of the ESA establishes the protocol of listing species in danger of extinction. Those species in most peril of extinction on all or throughout a significant portion of their range are classified as endangered. Those species with a substantial likelihood of becoming endangered in the foreseeable future are listed as threatened. The act of listing species falls under the exclusive jurisdiction of the United State Department of Interior. The United States Fish and Wildlife Service has been delegated the task of making listing determinations and managing species protection.

Section 9 of the ESA makes it unlawful to “take any [species listed as endangered or threatened] within the United States” ((a)(1)(B)). The term “take” means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (ESA § 3 (19)). The U.S. Fish and Wildlife Service has promulgated federal regulations which establish that the term “harm” includes the “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering” (50 C.F.R. § 17.3, 1994). In 1995, the U.S. Supreme Court upheld the federal regulation regarding habitat destruction. In *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon* the Court clarified that taking a species includes the destruction of habitat.

Violation of Section 9 carries substantial penalties in both the civil and criminal arenas. Civilly, the ESA allows for suits from both the federal government and citizen groups against violators of the Act. Penalties from civil suits can include both fines and

court mandated injunctions on current activities. Civil fines are statutorily capped at \$25,000 per each violation (ESA § 11 (a)). Criminally, the ESA allows the federal government to imprison the violator for up to one year for each violation and criminally fine them up to \$100,000, or both, per violation (ESA § 11 (b)).

In viewing the sanctioning system for the destruction of habitat, it is important to note that both the actors and the permitting agency can be sanctioned for the loss of habitat. In other words, if a local government issues a building permit which allows the destruction of critical habitat for a listed species, courts have allowed the local government to be listed as a respondent on a civil suit (Thomas 2001).⁵

In other noteworthy decisions regarding the ESA, courts have upheld the federal government's ability to protect listed wildlife at the expense of private property owners. In *Christy v. Hodel*, for instance, a sheepherder shot and killed a grizzly bear which was in the act of depredating his sheep. In the 8 days prior to the shooting, Christy had lost approximately 20 sheep, worth at least \$1200, to grizzly bears. Despite this, the federal government assessed a \$3,000 civil penalty for killing the bear in violation of the ESA. Christy asserted a takings claim, arguing that the federal law prohibited him from protecting his property. The Ninth Circuit Court of Appeals disagreed and denied Christy's appeal (857 F.2d 1324). The U.S. Supreme Court declined to review the case in 1989, making *Christy* the law of the land (490 U.S. 1114).

In *Mountain States Legal Foundation v. Hodel*, the Tenth Circuit Court of Appeals denied petitioners' claim to receive compensation for damage caused by

⁵ I could find no instance where a local government was listed as a defendant in a criminal suit arising from issuing a permit which destroyed habitat protected by the ESA.

federally protected wild horses (799 F.2d 1423 (10th Cir. 1986)).⁶ And in *Palila v. Hawaii Department of Land & Natural Resources*, the court forced the removal of privately owned animals off of privately owned land because the animals' grazing was harming the Palila, an endangered finch billed bird endemic to the Island of Hawaii (852 F.2d 1106 (9th Cir. 1988)).

Habitat Conservation Plans

Section 9 of the ESA, as initially drafted, prohibited all takings on private property without exception. This included even incidental takings—those where the landowner had unintentionally harmed or killed a listed species while performing an otherwise lawful activity. In 1982, Congress amended the ESA by creating Section 10(a), which allowed for the incidental taking of listed species from private property under certain circumstances. Particularly, Congress required an applicant for a incidental take permit to create a Habitat Conservation Plan (HCP) (Percival, et. al., 2000).

With an HCP, a landowner proposes to undergo activities which will help ensure the survival of the species concurrently with actions which may result in incidental take. For instance, in the first HCP created, a developer wanted to develop land on property on the slopes of San Bruno Mountain in San Francisco, but was barred because the property provided habitat for the endangered Blue Mission Butterfly. The developer proposed an HCP where 2000 of the 3500 acres owned would be set aside as open space and managed in perpetuity as habitat for the endangered butterfly. The HCP included plans to remove non-native vegetation on the 2000 acres of open space and to promote the native species on which the butterfly depended. Upon the promise to set aside the 2000 acres as

⁶ The U.S. Supreme Court also declined to review this case. See 480 U.S. 951 (1987).

butterfly habitat, the Fish and Wildlife Service allowed the development of 1500 acres of potential habitat for a housing and commercial center (Thomas 2001).

HCPs can be developed by individuals, businesses, communities, and local governments. Each HCP must specify:

- (i) the impact which will likely result from such taking;
- (ii) what steps the applicant will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps;
- (iii) what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and
- (iv) such other measures that the Secretary [of Interior] may require as being necessary or appropriate for purposes of the plan.

(ESA § 10 (2)(A))

IV. ATTRIBUTES OF UTAH PRAIRIE DOGS AND IRON COUNTY

In order to understand what has framed the action arena in the present case, it is necessary to view the exogenous variables at play. Here, three variables will be examined. These include the relevant biophysical aspects of prairie dogs, the relevant attributes of the community, and the rules and the corresponding incentives created by the ESA for the local elected officials. Each of these will be discussed below.

Relevant Biophysical Aspects of Prairie Dogs

Location and Visibility

In 1997, 65% of all known Utah prairie dogs lived within Iron County. Of these, 86% or 2,456 of 2,843 lived on private property (Iron County Commission and Utah Division of Wildlife Resources, 2001). A follow up study by the Utah Division of

Wildlife Resources in 2002 found that private lands supported 79% of the total population of prairie dogs in Iron County (Bonzo and Day, 2002).

Prairie dogs are easily visible. As noted above, although only 36 percent of land in Iron County is private, nearly 80% of prairie dogs live on that private property. Significant populations of prairie dogs live next to human developments in Cedar City, Enoch, Parowan, and Paragonah. Prairie dogs are frequently seen in backyards and farmer's fields.

Large numbers of the animals live in the Cedar City and Paragonah Cemeteries, the Cedar City Golf Course, the Cedar City and Parowan Airports, various athletic fields in Cedar City and Enoch, numerous farms, and numerous private residences. Prairie dogs can be seen running across Main Street on Cedar City, and behind local restaurants and businesses. Private agricultural fields lining the main roads into Parowan and Enoch provide a home to large colonies and prairie dogs have even colonized the roundabout in the freeway exit to Enoch from I-15.

Habitat and Feeding Habits

Prairie dogs prefer to live in areas where there is moist vegetation throughout the year and where there is low density of vegetation to allow visibility for predators (U.S. Fish and Wildlife, 1991). Preferred forage includes cool season grasses which entail up to 77% of the species diet (McDonald, 1993). Because of this combination of factors, cleared fields in agricultural production are especially attractive to the species. On agricultural fields, brush has been removed allowing for greater visibility. Irrigation provides for moist vegetation even in the driest seasons. Furthermore, cultivated species such as alfalfa grow in the early spring and last throughout the late fall.

Accordingly, prairie dogs frequently populate agricultural areas and can cause serious damage to human interests. Prairie dogs feeding on crops may make for a lower crop yield. Burrow complexes in private fields can severely damage plows, tractors, and other agricultural equipment (U.S. Fish and Wildlife Service, 1991).

The Plague

Prairie dogs are social creatures and carry various socially transmitted diseases such as the plague and Hanta Virus. A recent study by the The Vector-Borne Zoonotic Disease Laboratory, confirmed that prairie dogs may pose a public health risk due to their propensity to carry diseases communicable to humans. Recently, an eighteen year old man contracted the bubonic plague after receiving fleabites as he walked through an infected colony of Black-tailed prairie dogs in Colorado. Experts are concerned that the possibility for human contagion from plague epidemics in prairie dogs is somewhat significant (Pepper et. al., 2004). Documentation exists of entire colonies of Gunnison's prairie, a close relative of the Utah prairie dog, dying off as a result of bubonic plague epidemics (Pepper et. al., 2004). The Sylvatic plague recently decimated colonies of Utah prairie dogs in Utah's West Desert.

Relevant Attributes of the Iron County Community

History of Eradication Programs

Iron County residents have long viewed prairie dogs as a nuisance species. Beginning in the 1880s, ranchers working with the federal government undertook massive prairie dog eradication programs (US Fish and Wildlife, 1991). Intensive poisoning campaigns eradicated the species from areas where it had previously thrived

(Bonzo and Day, 2002). In 1930, 123,090 acres in Garfield, Iron, Piute, Sevier, and Wayne counties were poisoned (U.S. Fish and Wildlife Service, 1991). Such poisonings were responsible for reduction in prairie dogs during the 1920's and 1930's, 1950, and 1960 (Collier and Spillett 1973). The federal government discontinued the use of poison in 1963, but the practice of poisoning dogs was not outlawed for private individuals until the listing of the species under the ESA in 1973 (Bonzo and Day, 2002). A significant portion of the Iron County population still recalls the era when prairie dogs were treated as a scourge to be cleansed from the land.

Special Rule 4(d)

With eradication programs dead and the use of poisons banned, the Utah prairie dog made a sudden recovery. The prairie dogs became so plentiful by 1984 that the federal government down-listed their status to threatened. At that time, Iron County farmers particularly complained about the losses caused by the prairie dogs to crops and equipment. To help ameliorate these problems, Iron County farmers petitioned the Fish and Wildlife Service to allow them to shoot the prairie dogs to protect agricultural endeavors. Under Special Rule 4(d), the Fish and Wildlife Service agreed to allow up to 5000 prairie dogs to be shot or lethally trapped each year on agricultural land in the Cedar and Parowan valleys alone. That rule was altered in 1991 to allow 6000 prairie dogs total to be lethally taken off of agricultural land throughout the species' entire range (Bonzo and Day 2002(a)).

Shooting or lethally trapping prairie dogs is only allowed during June through August. The justification behind the high number of dogs to be shot lies in the argument that juvenile prairie dogs cause the greatest problems for farmers. Federal regulators

believed that killing a high number of young prairie dogs would not significantly alter the population because of the high juvenile mortality rate of the dogs. In essence, the argument goes that killing young dogs is inconsequential because the dogs would die anyway (Iron County Commission and Utah Division of Wildlife Resources, 2001).

A conservation officer determines how many dogs may be taken off a particular piece of agricultural land. Once the permit is issued, the holder of the permit must take no more than the listed quantity of dogs within 30 days of the issuance of the permit. Every year, dozens of permits are issued to shoot dogs. Between 1985 and 2002, over 11,000 dogs have been lethally taken through this program.

Local Politics and Perceptions of Prairie Dogs

The Iron County populous is overwhelmingly conservative. In the 2004 presidential election, 84% of voters voted for the Republican candidate (CBSNews.com, 2004). Conservative ideology fuels a great deal of distrust of government, especially the federal government. Many in Iron County believe that that the federal government should have no say in local governance.

In regards to prairie dogs, many Iron County residents are uncomfortable with the proximity in which the prairie dogs live. Some complain that the damage prairie dogs do to fields and landscaping. Many fear the dogs as a public health risk. Finally, some residents complain that prairie dogs serve as magnets for predators including foxes, coyotes, and badgers that arrive to feed on the dogs and then turn to domestic and farm animals as prey. Figure 3 contains a list generated by the Utah Division of Wildlife

Resources showing a partial list of the numbers and location dogs non-lethally trapped and moved at the request of landowners between 1998 and 2002.

Figure 3

Location of Trapping	1998	1999	2000	2001	2002	Total 98-02
Cedar City Airport	36	25	6	0	18	85
Cedar City Cemetery	135	35	22	8	18	218
Enoch Ball field	3	21	0	0	6	30
Paiute Ball field	122	64	130	0	69	385
Parowan Airport	11	9	0	0	0	20
Paragonah Cemetery	18	0	0	0	0	18
Private Residents	0	10	10	47	38	105
Southern Utah Univ. Farm	0	0	4	36	0	40
Golf Course	0	0	6	81	62	149
Canyon View Ball field	0	0	3	0	2	5
Centennial Ball field	0	0	0	0	13	13

(Bonzo and Day, 2002(b))

Despite the prairie dog's threatened status as viewed from the national perspective, residents of Iron County frequently complain about the prairie dogs' superabundance. Prairie dogs seem to be everywhere there. National concerns about the Utah prairie dog's potential extinction simply lack local credibility.

As a listed species, the prairie dog has become even less popular. Once just a nuisance, the dogs are perceived as posing a real stumbling block for otherwise lawful activities, in that prairie dogs now hamper what a landowner can do with his/her land. Changing from farming to development is perceived as being increasingly difficult on lands where prairie dogs live.

A Poor, Yet Changing Community

Finally, Iron County is rural and poor. As noted above, the median household income is more that \$12,000 less than the statewide average and the County has a relatively low unemployment rate. It therefore appears that there are many working poor in the County. To turn this trend around, the Iron County Commission consistently strives to welcome new and maintain existing business interests in the County. Various tax deferrals have been granted to existing businesses and various new businesses have been courted by the County.

Massive change is afoot in Iron County. As mentioned previously, the population of the County grew by over 60 percent during the last decade. In the present decade, the County population will likely grow by another 20 percent if current trends continue. This growth has placed a strain on resource systems as developers have scrambled to find land with sufficient water to build housing for newcomers. Accordingly, a great deal of the historical agricultural land is currently being used or is being contemplated for housing units and businesses. And previously unused land is now being contemplated for development.

V. WHY IRON COUNTY ELECTED OFFICIALS ACTED TO CREATE THE HCP

In 1998, Iron County submitted an HCP and was granted an incidental take permit from U.S. Fish and Wildlife which applied to all municipalities and unincorporated land in Iron County. By creating the HCP, Iron County undertook a massive obligation to monitor and improve prairie dog habitat. In light of the public sentiments above, this is a

confusing outcome. In this section, I will first briefly explain the HCP and then analyze why it was created.

The Iron County HCP

The issuance of an incidental take permit in July of 1998 culminated more than two years of diligent efforts by the Iron County Commission and Utah Division of Wildlife Resources to develop the HCP. The HCP covers all unincorporated lands in Iron County and the six incorporated municipalities. The central premise of the HCP is to encourage the development of sizable prairie dog colonies on public land (land owned by the federal government) in Iron County. While all features of the HCP cannot be explained in detail, some of the most important features are described below.

Permit Process

The HCP created an additional step in the building process in Iron County. Building permits are required for the creation of virtually all permanent structures throughout Iron County. The HCP obligates the office issuing the building permits to determine if the proposed construction lies in a prairie dog clearance area.⁷ Clearance areas defined as any area where prairie dogs or their sign have been mapped since 1976 plus a 1300 feet buffer zone to account for home range, disturbance distance, and any potential mapping error (Bonzo and Day, 2002(b)). If the proposed construction falls within one of these areas, the HCP requires an inspection to determine if prairie dogs or suitable prairie dog habitat are found on the site. If no prairie dogs or habitat are found, the permit may issue without further complication. However, if prairie dogs or habitat

⁷ Even those activities which do not require a building permit such as the construction of agricultural outbuildings, roads, and heavy excavation now require a confirmation that the activity is not occurring on prairie dog habitat.

are found, the permit may only be approved through the Iron County Commission upon a finding that there are a sufficient numbers of dogs as described below. (Bonzo and Day, 2002(b)).

Permanent Take Numbers

Activities resulting in the permanent removal of prairie dogs through the permanent destruction of prairie dog habitat are classified as permanent takes. The HCP establishes allowable numbers of prairie dogs which may be permanently taken. The annual number of dogs allowed is 10% of the five year average of the number of adult Utah prairie dogs counted on federal lands each spring (Bonzo and Day 2002(b)). The count occurs on federal land rather than private land because the HCP focuses on health of the species on public rather than private land. Between 1998 and 2005, the allowable permanent take off of private land in Iron County ranged between 50 and 98 dogs each year (Bonzo and Day 2002(b); Nay, 2005).

As noted above, the County Commission can only approve a building permit on prairie dog habitat if there are still dogs to be taken. Since 2002, there have been more applications for permanent take than there have been dogs. In such years, once the dogs run out, the County Commission cannot permit any further take off of prairie dog lands. In 2005, the last permit allowing permanent take off private land was issued by June (Nay, 2005). Accordingly, no further permits to take prairie dogs can be issued until Jan. 2006. There are currently dozens of applicants waiting to get permission to begin construction.

The HCP encourages the non-lethal taking of prairie dogs through live-trapping and translocation. Non-lethal trapping may occur between the months of June and

August. Properties cleared of prairie dogs in this manner are not assessed any additional fee. However, areas where builders begin before this process occurs are assessed a \$1000 per acre mitigation fee. This money is then put into other mitigation projects. Many choose not to wait to live trap the animals. In 2002 alone, the prairie dog mitigation fund grew by \$18,000.

Non-Permanent Take

The HCP also allows for a limited amount of non-permanent take. Non-permanent take occurs when prairie dogs are removed but prairie dog habitat is not destroyed. Non-permanent take is only allowed from certain areas in the County. Areas qualifying for non permanent take include:

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)...
(Iron County Commission and Utah Division of Wildlife Resources, 2001).

In the majority of non-permanent takes, the prairie dogs are live-trapped and moved. The animals are only killed as a last resort. However, agricultural lands are the exception where shooting and lethally trapping are allowed under the U.S. Fish and Wildlife Special Rule 4(d) as discussed above.

Analysis

It is assumed for the purposes of this paper that that elected officials in Iron County are boundedly rational and self-interested. As such, they will act when it is in their interest to do so. It is further assumed that it is generally in the best interest of the

elected officials to be re-elected. To be reelected, the elected officials must meet the needs of the electorate or those elements of the electorate which are crucial for re-election. Obviously, these assumptions are grossly over generalized, but as will be seen below, there is evidence that Iron County politicians have responded to pressures from elements of the electorate in developing the HCP.

The Nature of the Resource and Nature of the Community as Explanatory Factors

The I.A.D. framework has been used to analyze multiple scenarios dealing with natural resources. Analysts have identified a myriad of factors which make a creation of institutions and successful management of a resource more likely. Gibson and Becker summed most of these in stating the following three fundamental factors:

First, individuals from local communities must highly value a natural resource to have the incentive to manage it sustainably. Second, property rights must be developed to those individuals who use the resource to allow them to benefit from its management. Third, these individuals at the local level must have the ability to create [institutions] to regulate the use of the resource. (2000, 133)

In other work, Clark Gibson added, “individuals must perceive a resource to be scarce in order to want to contribute to a collective solution; if individuals view a resource as plentiful, they will not be willing to endure costs to manage it” (1999, 5).

From these necessary factors, there is little likelihood collective action would create local institutions to protect prairie dogs on private land. First, in their own right, prairie dogs offer very little to the citizens of Iron County. Prairie dogs eat crops, ruin landscaping, and may pose a public health risk. Of course, many argue that as a keystone species, the Utah prairie dog is an invaluable element of the local ecosystem.

This is an extraordinarily difficult sell to those living in their midst. The majority of prairie dogs in Iron County live on private lands. These lands, more often than not, have already been altered from their natural states. It is hard to argue to the farmer that his alpha field is better off because of the prairie dogs' presence. It is equally difficult to argue to residents of a subdivision that the prairie dog is the key stone species of the neighborhood's lawns and gardens. Unless the changes that have already occurred to those lands are reversed, the keystone status of the prairie dog is of little value in the majority of the areas where they now live. And proposing a reversal back to natural state, without further incentives, is simply preposterous to local landowners.

Second, prairie dogs do not appear to be locally scarce. They are in the ball fields, cemeteries, airports, backyards, and golf courses of the local communities. Their high visibility in the local human communities undercuts national concerns regarding their disappearance.

Third, there appears to be no historical community concern regarding the prairie dog's survival. Instead, there is a long history of prairie dog destruction dating back to 1880s when the local eradication programs began. Since then, there have been active local poisoning campaigns throughout the 1960s. Even after the listing of the species as endangered, it was locals who petitioned the U.S. Fish and Wildlife Service in 1984 to down-list the species to threatened status, and then asked for and received permission to shoot the prairie dogs as nuisance animals. Indeed, local farmers and ranchers still ask for and receive permission to shoot hundreds if not thousands of prairie dogs on agricultural lands under Special Rule 4(d) per year. The notion of shooting the prairie dogs comes up in every public meeting regarding prairie dog management. The

dichotomy that the animals are a nuisance which can be lawfully shot on agricultural lands but must be protected on other private lands is difficult for many citizens to understand. Lastly, if there were widespread genuine interest in preserving the prairie dogs at the community level, one would expect to observe active local campaigns to save the prairie dog. Such campaigns are conspicuously absent in Iron County.

Clearly, the nature of the resource should drive community drive policy makers away from protecting the species. As can be seen below, this is exactly what has occurred.

The Incentives of the ESA

Most institutional analysts now agree that “[f]or users to contemplate changing the institutions they face, they have to conclude that the expected benefits from an institutional change will exceed the immediate and long-term expected costs” (Ostrom 1999 9). The obvious reason for local management of the prairie dog lies in the incentives presented by the ESA. The ESA can have harsh consequences for both private landowners and local governments alike. A landowner with property containing a listed species has few options. He or she is somewhat beholden to the U.S. Fish and Wildlife Service to determine the acceptable uses of the property. To undertake major change on the property, the private citizen would have to seek and obtain an incidental take permit through the HCP process. Any local government issuing a building permit which harms a listed species’ habitat may also be liable in a civil action for violating the ESA.

By undergoing the HCP process, local politicians receive a double benefit. First, they are able to help their constituents facilitate potential development or other use of their private property without having to deal with the U.S. Fish and Wildlife Service on

an individual basis. Second, the HCP provides the local entity some insulation from lawsuits generated under the ESA regarding inappropriate permitting of actions on listed species' habitat.

In viewing the history of the Iron County HCP, it appears that at least one of these benefits weighed heavily on the County Commissioners. A review of the County Commission minutes indicates that the first real discussions of creating an HCP came in 1996 after the U.S. Fish and Wildlife Service held up several development projects due to prairie dog conflicts. The first involved a subdivision in Enoch, where the project site was initially determined prairie dog free, but was later halted by the U.S. Fish and Wildlife Service because the land was potential prairie dog habitat (ICC Minutes, 1996(a)). The second involved the U.S. Fish and Wildlife Service halting the construction of a large paper factory. The minute entry for April 11, 1996 reads:

[A constituent] discussed with the Commission a problem they are having with the Smead Paper Company site purchase. Apparently there has been one prairie dog located on the proposed building site. At this time, they have not been able to get anyone from the federal Fish & Wildlife service to cooperate and determine a solution to this problem. They will continue to attempt to contact US FWS to see if a permit can be obtained to proceed with development of the site.
(ICC Minutes, 1996(b))

By the very next Commission meeting (April 22), plans had been drawn up to complete a HCP. The Commission even went as far to develop an agreement with Smead to allow a law suit if the HCP was not diligently pursued. The April 22, 1996 minute entry states:

An agreement between Iron County, Cedar City and Smead Paper Company which outlines Iron County plans to proceed with a habitat conversation plan (HCP) for the Prairie Dog was discussed... The agreement explains that if the habitat plan is not completed within 2-1/4

years, Cedar City and Iron County will each place \$25,000.00 into an escrow account designated toward this habitat conservation plan. The money is to stay in the account for up to five additional years or until a HCP is adopted. *In the event that a HCP is not adopted and Smead feels that they have been damaged because of Iron County's negligence in attempting to get a HCP approved, they may sue the County for a maximum of \$50,000 total damages.* (Iron County Commission, (1996(c) Emphasis Added)

The agreement was signed that day and the process to create an HCP began in earnest. Throughout the process, County Commissioners expressed real concern over giving too much to the Utah prairie dog. For instance, on May 13, 1996, funding options to create the HCP were discussed. Funding options offered by the Sierra Club, the Grand Canyon Trust, and the Ford Foundation were not considered because the funding came with an obligation to enlarge prairie dog habitat, something in which the Commissioners were emphatically disinterested (ICC Minutes 1996(d)).

It took over a year from that point to draft the HCP. Part of the holdup came as a result of what the Commissioners wanted in the draft. On Jan. 27, 1997, the Commissioners reported that the federal agencies would have a difficult time signing off on the HCP as it was then drafted (ICC Minutes, 1997(a)). By July of the same year, the Commissioners sent the draft off for commentary from those who they thought should review the HCP. Included in these were the local Farm Bureau, the Cedar Livestock Association, the Iron County Sheep Growers Association, the Iron County Cattleman's Association, the Homebuilders Association, and the Iron County Board of Realtors (ICC Minutes, 1997(b)). Not surprisingly, the Commission seems to have sent the draft to those interest groups most negatively affected by the application of the ESA. Obviously absent from this list is any environmental or other pro-prairie dog group.

It is clear, then, that the Iron County Commissioners acted to create the HCP at least in part to ameliorate concerns of the local constituency and business interests regarding the application of the ESA. It is equally clear that the Commissioners have managed prairie dogs under the HCP with that same goal in mind. Within a year after the HCP was approved, the County Commission was inundated with requests for taking Utah prairie dogs. The Commission minutes report that by May 10, 1999, there were only 46 dogs remaining in the permanent take yearly allotment. On that day alone, one citizen requested that she be given a permit to clear 40 prairie dogs from her property on Main Street, in Cedar City. The Commission made the determination that the remaining dog permits be allocated on a first come first serve basis. The Commission also expressed the realization that the lack of permits may chill development in the County (ICC Minutes 1999(a)). By May 24, all of the remaining permits for the year had been allocated, and angry constituents from Enoch complained their projects were at a standstill because of lack of prairie dog permits (ICC Minutes 1999(b)).

The situation did not improve by the beginning of the following year. On Jan. 24, 2000, the Commission stated that applications to take 24 dogs had already been received and approved and that only 31 clearance permits remained for the entire year (ICC Minutes, 2000). The Commission began to search for ways to increase take.

When created, the HCP allowed certain mechanisms to increase allowable take during a given year through mitigation activities such as education programs, purchase or protection of habitat, etc. By 2002, Iron County had gained over 1000 additional dogs which could be permanently taken through these activities (Bonzo and Day, 2002(b)).

These additional prairie dog permits are regularly dispersed. In 2003, 2004, and 2005 the County had again run out of dogs which could be taken (Nay, 2005).

The County Commission announced yet another method to increase prairie dog take under the HCP in October of this year. Through negotiation with the State of Utah School and Institutional Trust Lands Administrations (SITLA), the Commission arranged for the creation of a “prairie dog bank” in which SITLA agreed to set aside an 800 acre parcel of land containing a sizable population of prairie dogs in the Parker Mountains (outside of Iron County) of west central Utah. It will then sell credits to Iron County to help secure a prairie dog colony there in perpetuity. Because the project entails promotion of the species, Iron County will be given mitigation credits which can generate additional take in Iron County. At the rate established by SITLA, Iron County agreed to pay \$1636.00 per prairie dog credit, plus a \$200.00 fee to help establish a perpetual fund for the project (Baird, 2005). Iron County agreed to purchase 77 prairie dog credits from SITLA and will receive an additional allotment of 77 dogs which can be taken in the County in 2005. These prairie dog permits will be allocated on a first come first serve basis. At this time, it is unclear how many of the additional permits have been utilized (Nay, 2005).

Indeed, it appears that Iron County elected officials are seeking every opportunity to increase permissible permanent take from private lands. Ironically, the County Commission has used the habitat conservation plan to consistently destroy habitat on private property. The ESA has allowed local elected officials a mechanism to avoid the harshest consequences of endangered species protection. It may be that the endangered species will be harmed as a result.

VI. CONCLUSIONS AND RECOMMENDATIONS

On its face, the Iron County HCP appears to be an enigma. It is local institution created through the authority of an unpopular federal act to protect an unpopular animal. In looking at the HCP through the institutional perspective, however, it is an obvious outcome to the incentives at play. Prairie dogs are unpopular in Iron County, but they are protected by the ESA, a federal law which has a profound impact on those lands where prairie dogs live. As Iron County has grown, development has increasingly approached prairie dog habitat. This is not difficult to understand in that prairie dogs in Iron County live where people live. To satisfy the demands of the electorate and to encourage community growth, the Iron County Commission developed the HCP as seemingly the only avenue given under the ESA to allow incidental takes of the listed species. The HCP has since been used as a mechanism to ensure further take of the prairie dog in order to allow more development.

Concerns Regarding the Future of Prairie Dogs in Iron County

On one hand the Iron County HCP can be seen as a victory for the ESA. The federal law has inspired local officials to nominally act to conserve an unpopular species. However, as indicated above, institutions governing prairie dog management in Iron County facilitate development. It is much less clear that they provide adequate incentives to promote the survival of the prairie dog. Between 2000 and 2005, prairie dog totals on public and private lands declined from 4492 to 3649⁸ (Bonzo 2005). Because, prairie dog population varies dramatically based on a variety of factors, more time is needed to identify if the HCP is harming prairie dog recovery.

⁸ Prairie dog totals from 2005 are still over 1000 dogs more than they were in 1995. Also, this count was for the West Desert Recovery Area, an area consisting of almost all of Iron County and a sliver of Beaver County to the north. No County specific totals were available.

That being said, it is clear that the incentives driving the HCP will cause more habitat loss on private lands. Accordingly, it may not be a long term solution to the Iron County prairie dog problem. If prairie dog numbers do decline significantly as a result of the HCP, the U.S. Fish and Wildlife Service may make the determination to re-list the species as endangered and reevaluate the HCP process.

Perhaps a second approach to aiding prairie dogs in Iron County is needed. There may be some sense in creating institutions which provide positive incentives for private landowners housing the prairie dog. Such incentives include tax benefits or actual payments to the landowner. For instance, the environmental group Defenders of Wildlife has been engaged in a project paying ranchers whose animals are killed by wolves for over ten years. The benefits include providing less incentive to those ranchers from simply shooting the wolves and hoping not to get caught by federal investigators (Lambert and Smith, 1994).

Such positive incentives are currently being debated in the United States Congress. In a recent bill sponsored by Republican Representative Gary Pombo from California, the House of Representatives passed sweeping reforms of the ESA.⁹ Included in the bill is a proposal for the U.S. government to pay private landowners whose property provides habitat for endangered species. The Senate has yet to consider the amendments to the ESA. Without some form of positive incentive provided to residents of Iron County, it seems the nature of prairie dogs will continue to make them unwanted tenants which locals want to dispose of, displace, or simply shoot.

⁹ Certainly, these reforms may also destroy any teeth the ESA had in promoting the survival of endangered species.

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