CANDIDATE AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Cynomys ludovicianus **COMMON NAME:** Black-tailed prairie dog **LEAD REGION:** Region 6 **INFORMATION CURRENT AS OF:** March 18, 2002 STATUS/ACTION: New candidate X Continuing candidate Non-petitioned X Petitioned - Date petition received: July 31, 1998 X 90-day positive - FR date: March 25, 1999 X 12-month warranted but precluded - FR date: February 4, 2000 ____ Is the petition requesting a reclassification of a listed species? ____ Listing priority change Former LP: ____ New LP: ____ Date species first became a candidate: February 4, 2000 Candidate removal: Former LP: (Check only one reason) __ A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status. __ F - Range is no longer a U.S. territory __ M - Taxon mistakenly included in past notice of review. __ N - Taxon may not meet the Act's definition of "species." X - Taxon believed to be extinct. ANIMAL/PLANT GROUP AND FAMILY: Mammal, Sciuridae HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Arizona, Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Wyoming, Canada, Mexico CURRENT STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Wyoming, Canada, Mexico

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INTRODUCTION: This review presents new information that we have received during approximately the past 12 months and reevaluation of previously acquired information regarding the black-tailed prairie dog. This is the second annual candidate assessment since publication of the 12-month Finding (U.S. Fish and Wildlife Service 2000) on February 4, 2000. The first annual candidate assessment was completed February 7, 2001.

BIOLOGICAL INFORMATION: Some additional information regarding biological information related to the black-tailed prairie dog has been obtained since the previous candidate assessment. The following is a brief summary of currently available information.

There are five species of prairie dogs in North America. They are rodents within the squirrel family (*Sciuridae*) and include the black-tailed prairie dog, the white-tailed prairie dog (*Cynomys leucurus*), the Gunnison's prairie dog (*C. gunnisoni*), the Utah prairie dog (*C. parvidens*), and the Mexican prairie dog (*C. mexicanus*) (Pizzimenti 1975). The Utah and Mexican prairie dogs are currently listed as threatened (49 FR 22339) and endangered (35 FR 8495), respectively. Generally, the black-tailed prairie dog occurs east of the other four species in more mesic habitat. Based upon the information currently available, the Service concurs with Pizzimenti's (1975) assessment of the species as monotypic.

The Endangered Species Act directs the Service to consider a species' status in foreign countries as well as in the United States. In Canada, the black-tailed prairie dog has been considered vulnerable by the Committee On the Status of Endangered Wildlife in Canada (COSEWIC) since 1978 due to its restricted distribution. Its status was recently reevaluated and remains vulnerable (COSEWIC 1998). In Mexico, black-tailed prairie dog populations have been reduced, largely due to control efforts and agricultural conversion (Ceballos et al. 1993) and the species is considered threatened (SEMARNAP 1994).

Black-tailed prairie dogs are diurnal, burrowing animals. Historically, they generally occurred in large colonies that contained thousands of individuals, covered hundreds or thousands of acres, and extended for miles (Bailey 1905). At present, most colonies are much smaller. Groups of colonies comprise a complex. Coloniality offers an effective defense mechanism by aiding in the detection of predators and by deterring predators through mobbing behavior. It increases reproductive success through cooperative rearing of juveniles and aids parasite removal via shared grooming.

However, coloniality also promotes the transmission of disease, which can significantly suppress populations (Biggins and Kosoy 2001, Hoogland 1995, Olsen 1981). Accordingly, disease may play a major role in the population dynamics of the species. Black-tailed prairie dogs have little immunity to sylvatic plague, a disease that has only been in North America for approximately 100 years (Biggins and Kosoy 2001, Eskey and Haas 1940). Accordingly, the species has not evolved genetic or population mechanisms sufficient to ensure its persistence (U.S. Fish and

Wildlife Service 2000). Plague currently occurs in most of the species' range and could spread into the remainder of its range (Cully and Williams 2001). However, recent information suggests that black-tailed prairie dogs may not be as vulnerable to this disease in some situations as previously thought (see discussion under Factor C).

Black-tailed prairie dogs are not prolific in comparison to many other rodents. Several biological factors determine the reproductive potential of the species. Females usually do not breed until their second year, live 3-4 years, and produce only a single litter, usually 4-5 pups, annually (Hoogland 1995, Hoogland 2001, King 1955, Knowles and Knowles 1994). Therefore, one female may produce 0-20 young in its lifetime. Nevertheless, the species is capable of rapid population increases subsequent to significant reductions (Seery, U.S. Fish and Wildlife Service, in litt. 2001).

The historic range of the black-tailed prairie dog included portions of 11 States, Canada, and Mexico. Today it occurs from extreme south-central Canada to northeastern Mexico and from approximately the 98th meridian west to the Rocky Mountains. The species is currently present in 10 States including: Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming. It is extirpated in Arizona. Significant range contractions have occurred in the southwestern portion of the species' range in Arizona, western New Mexico, and western Texas and in the eastern portion of the species' range in Kansas, Nebraska, Oklahoma, South Dakota and Texas. These range contractions, largely due to habitat destruction through cropland development in the east (Black-footed Ferret Recovery Foundation, in litt.1999) and through conversion of grasslands to desert shrublands in the southwest (Pidgeon et al. 2001), represent approximately 20 percent of the species' original range. Only a few individuals, or none at all, remain in these areas (see discussion under Distribution, Abundance, and Trends). The species is absent from a significant portion of its historic range, both peripheral and interior, despite perceptions to the contrary engendered in part by its conspicuous life history, e.g., its diurnal behavior, its modifications to the landscape, and its persistence in small remnant populations across much of its former range.

Approximately 66 percent of black-tailed prairie dog range in the United States is affected by sylvatic plague (Black-footed Ferret Recovery Foundation, in litt. 1999), approximately the western two-thirds of the species' range. Another important factor which has affected the species historically is the conversion of rangeland to cropland. Conversion of the native prairie to cropland has largely progressed across the species' range from east to west, with the more intensive agricultural use in the eastern portion of the species' range. The Black-footed Ferret Recovery Foundation (in litt. 1999) evaluated the amount of habitat (grass/shrub lands) currently available to the species. In the plague-free portion of the species' range (34 percent), less than 33 percent of the land is available to the species as non-cropland. Therefore, only approximately 10 percent of the black-tailed prairie dog range is both plague-free and currently suitable (i.e., not tilled). Most of this suitable habitat and other habitat modified by the presence of disease is unoccupied at present. The 12-month Finding stated that "the majority of plague-free, suitable range occurs in South Dakota." A more accurate statement is that more plague-free, suitable

range occurs in South Dakota than in any other State within the historic range of the species.

Distribution, Abundance, and Trends

Some recent statewide estimates of black-tailed prairie dog occupied habitat provided by State agencies since the previous candidate assessment were larger than some similar estimates reported in the 12-month Finding. However, the importance of these differences is difficult to interpret given--(1) the difficulty of accurately determining the amount of occupied habitat extant and the consequent variability and accuracy of various estimates, (2) the difficulty of identifying population trends between estimates acquired in different manners and at different times, and (3) the catastrophic impacts that plague can cause to relatively large populations in a short period of time. Because of these difficulties it is appropriate to evaluate the species' status based on the significance of the various threats as evidenced by comparable trend information, rather than on variations in gross occupied habitat estimates. Trend information acquired from closely monitored sites, evaluated by relatively consistent methodologies is especially important. Inferences that area-wide or range-wide populations have behaved and will behave in a similar manner to these closely monitored sites are key to Service evaluations in this assessment.

Previous evaluations of area-wide or range-wide population trends reported in the 12-month Finding are now inconclusive due to new estimates and the variables mentioned above. In particular, data presented in Figures 4 and 5 should be disregarded due to new information pertaining to statewide estimates in Colorado, Kansas, Texas, and Wyoming. Nevertheless, Service conclusions with regard to likely general downward black-tailed prairie dog population trends remain as stated in the 12-month Finding.

Additional information regarding distribution, abundance and trends of black-tailed prairie dog occupied habitat has been obtained from State and Federal agencies and other parties since the previous candidate assessment. Information regarding historic and recent occurrence of the black-tailed prairie dog is presented in Table 1. Dates of estimates that differed by more than 1 year from date of publication are noted. The dates, methodologies, and ultimately the reliability of these estimates varied. In an effort to avoid repetition, we have removed two columns from Table 1 which were present in earlier versions of this table. We removed the data sets from Mulhern and Knowles (1995) and Knowles (1995). These data sets were largely reiterations of other references. In some cases several estimates were provided for a single State during the past year. In these instances the most recent estimate from the Black-tailed Prairie Dog Conservation Team Meeting in Las Cruces, NM on January 7-8, 2002 (Luce, Wyoming Game and Fish Department, in litt. 2002) has been added to Table 1. All of the new information for States, Tribes, and Countries is summarized in the narrative which follows Table 1.

Table 1. Summary of Estimates of Black-tailed Prairie Dog Occupied Habitat in Various Areas for Selected Dates (estimates in thousands of acres)

State* or Country	Historic	BSF W 1961*	Other Recent	BFFR F 1998**	States 1998	Knowle s 1998	USFW S 2000	States 2000	States 2001 (new information)
Arizona	650 (Van Pelt <u>in litt.</u> 1998))	0	0	0	0	0	0	0	0
Colorado	3,000 (Clark 1989) 7,000 (Knowles 1998)	96	89 in 1979 (Van Pelt 1999)	326	973 in 1990 (CO Dept AG)	44	93	214 (CO DOW)	300-500 (co dow)
Kansas	2,000 (Lantz 1903) 2,500 (Knowles 1998)	50	57 (Smith 1958) 36 (Henderson & Little 1973) 47 (Vanderhoof & Robel 1992)	147		36	42		125 (KS DW&P)
Montana	1,471 (Flath&Clark 1986) 6,000 (Knowles 1998)	28	125 (Flath & Clark 1986) >100 (Campbell 1989)		66 (MT FW&P)	65	65	80-90 (MT FW&P)	90 (MT FW&P)
Nebraska	6,000 (Knowles 1998)	30	15 in 1971 (Lock 1973) 81 in 1999 (Sidle 2001)	80	60-80 (NE G&P)	60	60	80 (Luce pers. comm.)	27-70 (NE G&P)
New Mexico	>6,640 (Bailey 1932)	17	137 (Bodenchuck 1981)	107		15	39	<50 (NM G&F)	< 50 (NM G& F)
North Dakota	2,000 (Knowles 1998)	20	>7 (Grondahl 1973) 10 (Stockrahm 1979) 35 in 1999 (Sidle 2001)	15	30 (ND G&F)	20	25	30 (ND G&F)	33 (ND G&F)
Oklahoma	950 (Knowles 1998)	15	10 (Tyler 1968) 15 (Lewis & Hassien 1973) 18 (Shackford et al. 1990) 8 in 1999 (Lomolino&Smith 2001)	70	18 (OK DWC)	<9.5	9		19 (ок дwc)

State* or Country	Historic	BSF W 1961*	Other Recent	BFFR F 1998**	States 1998	Knowle s 1998	USFW S 2000	States 2000	States 2001 (new information)
South Dakota	1,757 (Linder et al. 1972)	33	37 in 1967 (Henderson et al 1974) 60 in 1968 (Rose 1973) 700 in 1980 (Tschetter 1988) 184 in 1987 (Tschetter 1988) 142 in 1999 (Sidle 2001)	175	231 in 1996 (SD GF&P)	245	147	>150 (SD GF&P)	142 (SD GF&P)
Texas	58,000 (Bailey 1905)	26	>13 (Cottam & Caroline 1965) 90 (Cheatheam 1977) >68 (Lair & Mecham 1991)	227		23	71	86 (TX P&W)	150-200 (TX P&W)
Wyoming	16,000 (Knowles 1998)	49	133 in 1971 (Clark 1973) 329 in 1999 (Sidle 2001)	422	131-204 in 1987 (WY G&F) 362 (WY Dept AG)	70-180	125	300 (WY G&F)	<300 (WY G&F)
U.S Total	111,000 (Knowles 1998)	364		1,686		677	676	1,041	1,383****
Canada	1.5 - 2 (Knowles 1998)		1.9 (Milkon 1976) 1.6 (Laing 1986) 2.3 (Fargey pers. comm. 1998)			2	2		2.6 (Fargey in litt.)
Mexico	1,384 (Ceballos et al.1993)		136 (Ceballos et al. 1993)			90	90		>49 (List <u>in</u> <u>litt</u> .)
N. America	104,000 (Anderson et al 1986)**** 99,000-247,000 (Miller et al. 1996)**** 384,000 historic range (Seton 1953)					769	768		1435

Includes Tribal lands within State boundaries

^{**} Bureau of Sport Fisheries and Wildlife (1961))

Black-footed Ferret Recovery Foundation phone survey. September 1998 ***

^{****}

Includes all prairie dog species present
Where a range is provided as the State estimate, the mid-point is used for the purpose of totaling estimates ****

<u>Arizona</u> - The black-tailed prairie dog is extirpated at present in Arizona. No additional information regarding distribution, abundance, and trends of the species in Arizona has been obtained since the 12-month Finding.

Colorado - Statewide in 2001, the Colorado Division of Wildlife reported an estimate of 214,000 acres (87,000 hectares) of black-tailed prairie dog occupied habitat based upon a compilation by EDAW (2000) of all known data sets from the 1970's to the present (Pusateri, Colorado Division of Wildlife, in litt. 2001). At the Black-tailed Prairie Dog Conservation Team meeting in Las Cruces, NM on January 7-8, 2002 (Luce, Wyoming Game and Fish Department, in litt. 2002), it was noted that based upon on-going aerial surveys, the Colorado Division of Wildlife anticipates revising its statewide estimate to 300,000 - 500,000 acres (121,500 - 202,500 hectares). This estimate is substantially higher than the Service estimate in the 12-month Finding of 93,000 acres (38,000 hectares). However, EDAW's 2000 estimate and the anticipated revised 2002 estimate are much lower than that reported by Colorado Department of Agriculture (1990) of approximately 970,000 acres (393,000 hectares).

For specific sites, Cully and Johnson (2001) reported 3,689 acres (1,493 hectares) of black-tailed prairie dog occupied habitat at Comanche National Grassland, an 87 percent increase from 1999, but still approximately 900 acres (365 hectares) or 20 percent less than the 1995 estimate (Cully 1998). Maynard (U.S. Army, in litt. 2001) provided information regarding current occupied habitat at Army installations including: 1,676 acres (679 hectares) at Fort Carson (a 52 percent decline from last year's estimate due to plague) and approximately 300 acres (122 hectares) at Pinon Canyon Maneuver Site. Additionally, Hoefert (U.S. Army, in litt. 2001) reported significant reductions due to plague at Pueblo Army Depot, where there are now approximately 2,623 acres (1,062 hectares) of occupied habitat. The Rocky Mountain Arsenal National Wildlife Refuge experienced a 62 percent decline from 1,645 acres (666 hectares) in 2000 to 618 (250 hectares) in 2001 due to plague (Seery, U.S. Fish and Wildlife Service, in litt. 2001).

In general, populations of the black-tailed prairie dog in Colorado appear to be stable over the short-term, but may be declining over the long-term. Trend information at most sites in the State continues to indicate declines due to plague, with partial recovery in subsequent years, but without complete recovery to pre-plague numbers. The black-tailed prairie dog appears to be widely distributed throughout its historic range in Colorado.

<u>Kansas</u> - Statewide in 2001, the Kansas Department of Wildlife and Parks conducted aerial surveys. Its preliminary estimate, as noted at the Black-tailed Prairie Dog Conservation Team meeting in Las Cruces, NM on January 7-8, 2002 (Luce, Wyoming Game and Fish Department, in <u>litt</u>. 2002), was 125,000 acres (51,000 hectares) of black-tailed prairie dog occupied habitat. Estimates of colony size within one-half mile of the aerial transects were used in this effort, which is a different approach from the methodology developed by Sidle et al. (2001) which has been used by several States reporting aerial survey information. This estimate is substantially higher than the Service estimate in the 12-month Finding of 42,000 acres (17,000 hectares). The Service estimate represented the mid-point between estimates of Vanderhoof and Robel (1992)

and Knowles (1998) for Kansas; and was similar to Smith (1958) and Henderson and Little (1973). The recent Kansas Department of Wildlife and Parks estimate is substantially larger than most other estimates of recent decades; it may represent an increase, or be the result of a difference in the methodology of enumeration.

For specific sites, the only recent estimate of occupied habitat is 2,439 acres (987 hectares) at Cimarron National Grassland (a 44 percent increase from 1999) (Cully and Johnson 2001).

In general, black-tailed prairie dog populations in Kansas may be increasing, but appear to be at least stable. The species' range appears to be somewhat restricted in the eastern portion of the State.

<u>Montana</u> - Statewide in 2001, the Montana Department of Fish, Wildlife and Parks provided an estimate (including Tribal lands) of 90,000 acres (36,000 hectares) of black-tailed prairie dog occupied habitat (Hagener, Montana Department of Fish, Wildlife and Parks, <u>in litt</u>. 2001). This estimate is larger than the Service estimate in the 12-month Finding of 65,000 acres (26,000 hectares).

For specific sites, recent estimates of occupied habitat are available for Tribal lands in Montana including: 7,000 acres (2,800 hectares) at the Crow Reservation and 3,300 acres (1,300 hectares) at the Northern Cheyenne Reservation, an increase of 500 acres (200 hectares), or 18 percent, from last year's estimate (Kaiser, U.S. Bureau of Indian Affairs, in litt. 2001); but still 7,000 acres (2,800 hectares) less than, or 30 percent of, the 1990 estimate by Young (1997) of 10,458 acres (4,235 hectares) of occupied habitat. Current occupied habitat estimate in 2001 for Ft. Belknap Reservation was 12,000 (Vosburgh 2002); Vosburgh (Ft. Belknap Fish and Wildlife Department, in litt. 2001) notes that 3,200 acres (1,300 hectares) have been lost due to plague during the past three years. Prior to recent plague epizootics, Ft. Belknap Reservation had approximately 16,000 acres (6,500 hectares) of occupied habitat (Montana Prairie Dog Working Group 2001). Cumulative losses in occupied habitat of approximately 20 percent at Ft. Belknap Reservation and 70 percent at Northern Cheyenne Reservation have been experienced in approximately the last decade due to plague.

Phillips County in north-central Montana encompasses Bureau of Land Management, State, and private lands, as well as portions of Charles M. Russell National Wildlife Refuge. Estimates of black-tailed prairie dog occupied habitat in this county vary, apparently due to differences in estimates of occupied habitat on BLM lands. The Montana Prairie Dog Working Group (2001) reports that 11,100 acres (4,500 hectares) of occupied habitat currently exist on BLM lands compared to 12,346 acres (5,000 hectares) in 1988. Haske (Bureau of Land Management, in litt. 2002) estimates that 8,039 acres (3,256 hectares) of occupied habitat currently exist on BLM lands and notes that 5,181 acres (2,098 hectares) are currently unoccupied. These last two

estimates added together equal 13,220 acres (5,354 hectares) of habitat which apparently constitute the previous (1988) estimate for occupied habitat. Haske (Bureau of Land Management, in litt. 2002) also notes that 619 acres (251 hectares) were impacted by plague during the past year.

In general, populations of the black-tailed prairie dog in Montana appear to be stable over the short-term, but declining over the long-term. Trend information at most sites in the State continues to indicate declines due to plague, with partial recovery in subsequent years, but without complete recovery to pre-plague levels. Remnant black-tailed prairie dog populations appear to be distributed throughout most of the species' historic range in Montana.

Nebraska - Statewide in 2001, the Nebraska Game and Parks Commission estimated that there are approximately 70,000 acres (28,000 hectares) of black-tailed prairie dog occupied habitat statewide (Fritz, Nebraska Game and Parks Commission, in litt. 2001). This estimate is similar to the Service estimate in the 12-month Finding of 60,000 acres (24,000 hectares). At the Black-tailed Prairie Dog Conservation Team meeting in Las Cruces, NM on January 7-8, 2002 (Luce, Wyoming Game and Fish Department, in litt. 2002), Nebraska Game and Parks Commission noted an apparent substantial decrease in the amount of occupied habitat. Ground truthing from the aerial photos used to derive the 70,000 acre estimate were able to locate only 27,000 acres (11,000 hectares) of active colonies. Loss of habitat was attributed to control activities and range conversion to cropland. However, it is not known if this lower estimate is an artifact due to sampling techniques. The 27,000 acre estimate was derived from revisiting previously occupied sites. In Texas, Ernst (2001) reported via review of extensive aerial photographs that similar amounts of occupied habitat were present between 1991 and 1998, although the location of many colonies had shifted significantly.

No new information was obtained for specific sites in Nebraska.

In general, populations of the black-tailed prairie dog in Nebraska appear to be stable to declining. The species' range is somewhat restricted in the eastern portion of the State.

New Mexico - Statewide in 2001, the New Mexico Department of Game and Fish noted that their surveys are only partially completed, but based upon available information they believe that it is "unlikely that there will be 50,000 acres (20,000 hectares) of black-tailed prairie dog occupied habitat" (Schmitt, New Mexico Department of Game and Fish, in litt 2001). This estimate is similar to the Service estimate in the 12-month Finding of 39,000 acres (16,000 hectares). Approximately 50 percent of the ground-truthed black-tailed prairie dog colonies which were active 5 years ago are now inactive (Luce, Wyoming Game and Fish Department, in litt. 2002), but this result may be an artifact of sampling (see Nebraska discussion above).

For specific sites, the Bureau of Land Management reported 216 acres (87 hectares) of black-tailed prairie dog occupied habitat on the White Sands Unit and 583 acres (236 hectares) of occupied habitat on the Roswell Unit on lands it manages (Haske, Bureau of Land Management, in litt. 2002). The U.S. Army provided an estimate of 330 acres (134 hectares) of black-tailed prairie dog occupied habitat at a Fort Bliss facility in New Mexico (Hoefert, U.S. Army, in litt. 2001).

In general, populations of the black-tailed prairie dog in New Mexico appear to be stable to declining. The species appears to be largely extirpated from western portions of the State.

North Dakota - Statewide in 2001, the North Dakota Game and Fish Department noted that a survey of occupied habitat will be completed by June, 2002 (Hildebrand, North Dakota Game and Fish Department, in litt. 2001). At this time its statewide estimate (including Tribal lands) is 33,000 acres (13,000 hectares) of occupied habitat based upon aerial surveys conducted by the U.S. Forest Service (Sidle 2001). This estimate is similar to the Service estimate in the 12-month Finding of 25,000 acres (10,000 hectares).

For specific sites, Bureau of Land Management reported 400 acres (160 hectares) of black-tailed prairie dog occupied habitat on lands it manages throughout North Dakota (Haske, Bureau of Land Management, in litt. 2002).

In general, populations of the black-tailed prairie dog in North Dakota appear to be stable. Remnant populations appear distributed throughout most of the species' historic range in the State.

Oklahoma - Statewide in 2001, approximately one-eighth of the black-tailed prairie dog potential habitat was aerially surveyed (Duffy, Oklahoma Department of Wildlife Conservation, in litt. 2001). The Oklahoma Department of Wildlife Conservation noted at the Black-tailed Prairie Dog Conservation Team meeting in Las Cruces, NM on January 7-8, 2001 that, based upon this partial aerial survey, it estimates that 18,823 acres (7,600 hectares) of occupied habitat exist statewide (Luce, Wyoming Game and Fish Department, in litt. 2002). A final report with more complete information and a description of methods is not available at this time. The Oklahoma Department of Wildlife Conservation estimate is substantially larger than the Service estimate in the 12-month Finding of 9,000 acres (3,600 hectares), which was based on Lomolino and Smith (2001) data from 1999. It is unclear whether differences in estimation methodologies or changes in black-tailed prairie dog populations accounts for this discrepancy.

No new information was obtained for specific sites in Oklahoma.

In general, populations of the black-tailed prairie dog in Oklahoma appear to be stable to increasing over the short-term, but declining over the long term. The species' range is somewhat restricted in eastern portions of the State.

<u>South Dakota</u> - Statewide in 2001, the South Dakota Department of Game, Fish and Parks provided an estimate (including tribal lands) of 142,000 acres (57,500 hectares) of black-tailed prairie dog occupied habitat at the Black-tailed Prairie Dog Conservation Team meeting in Las Cruces, NM on January 7-8, 2001 (Luce, Wyoming Game and Fish Department, in <u>litt</u>.2002). This estimate is similar to the Service estimate provided in the 12-month Finding of 147,000 acres (60,000 hectares).

For specific sites, the National Park Service provided information regarding black-tailed prairie dog occupied habitat of 4,500 acres (1,800 hectares) at Badlands National Park. (Albertson, National Park Service, in litt. 2001). Turner Endangered Species personnel estimate 855 acres (346 hectares) of occupied habitat at Bad River Ranch (Bly Honness, Turner Endangered Species Fund, in litt. 2001). The Bureau of Land Management reports 210 acres (85 hectares) of occupied habitat on lands it manages in South Dakota (Haske, U.S. Bureau of Land Management, in litt. 2002).

In general, populations of the black-tailed prairie dog in South Dakota appear to be stable. The species appears to be widely distributed throughout most of the species' historic range in South Dakota. No changes in occupied habitat (approximately 100,000 acres / 40,500 hectares) were noted for Tribal lands, where most of the occupied habitat currently exists in South Dakota.

<u>Texas</u> - Statewide in 2001, the Texas Parks and Wildlife Department provided a preliminary estimate of 150,000 - 200,000 acres (61,000 - 81,000 hectares) of black-tailed prairie dog occupied habitat (Sullivan, Texas Parks and Wildlife Department, <u>in litt.</u> 2001). This estimate is substantially larger than the Service estimate in the 12-month Finding of 71,000 acres (29,000 hectares).

County estimates are under development by the Texas Parks and Wildlife Department.

In general, populations of the black-tailed prairie dog in Texas appear to be stable to declining. The species' range appears to be somewhat restricted in south-western portions of the State.

Wyoming - Statewide in 2001, the Wyoming Game and Fish Department provided an estimate of 300,000 acres (122,000 hectares) of black-tailed prairie dog occupied habitat based upon information from Sidle et al. (2001). This estimate appears to be substantially larger than the Service estimate in the 12-month Finding of 125,000 acres (51,000 hectares). However, the Wyoming Game and Fish Department noted that it was "very skeptical" of this estimate and believes the actual amount may be somewhat lower (Rothwell, Wyoming Game and Fish Department, in litt. 2001).

For specific sites, the U.S. Army provided an estimate of 700 acres (280 hectares) of black-tailed prairie dog occupied habitat at the Sheridan Training Area (Hoefert, U.S. Army, <u>in litt.</u> 2001). The Bureau of Land Management reports for lands it manages in Wyoming: 310 acres (126 hectares) in the Cody Unit, 500 acres (200 hectares) in the Great Divide Unit, 380 acres

(154 hectares) in the Platte River Unit, 11,132 acres (4,500 hectares) in the Buffalo Unit, and 3,352 acres (1,360 hectares) in the Newcastle Unit (Haske, U.S. Bureau of Land Management, in litt. 2002). The Thunder Basin National Grassland experienced a loss of approximately 8,000-10,000 acres (3,000-4,000 hectares) of occupied habitat due to impacts from plague in 2001 (Rothwell, Wyoming Game and Fish Department, in litt. 2001 and Sidle, U.S. Forest Service, in litt. 2001). This represents an approximate 50 percent loss of the occupied habitat at Thunder Basin National Grassland based upon the most recent previous estimate of 18,240 acres (7,400 hectares) (Sidle, U.S. Forest Service, in litt. 1999).

In general, populations of the black-tailed prairie dog in Wyoming appear to be stable over the short-term, but declining over the long-term. Plague has resulted in notable declines in the State's largest identified complex at Thunder Basin National Grassland. The species appears to widely distributed throughout its historic range in the State.

<u>Canada</u> - Fargey (Grasslands National Park, <u>in litt</u>. 2001) estimated 2,589 acres (1,049 hectares) of black-tailed prairie dog occupied habitat in Canada. This estimate is similar to the Service estimate in the 12-month Finding of 2,000 acres (800 hectares), all at Grasslands National Park.

In general, populations of the black-tailed prairie dog in Canada appear to be stable, but relatively small.

Mexico - List (in litt. 2001) estimated more than 49,000 acres (20,000 hectares) of black-tailed prairie dog occupied habitat in Mexico, almost all of it at one site near Janos, Chihuahua. This estimate is approximately 46 percent lower than the Service estimate in the 12-month Finding of 90,000 acres (36,000 hectares). List noted that 2,889 acres (1170 hectares) had been lost (50 percent of that due to conversion of rangeland to cropland), but that the large difference from earlier estimates was due to earlier mapping errors and did not represent an actual loss of occupied habitat.

In general, populations of the black-tailed prairie dog in Mexico appear to be stable. The species appears to be restricted in its range.

THREATS: The Act directs the Secretary of Interior (delegated to the Service) to "determine whether any species is an endangered species or a threatened species because of any of the following factors." We evaluate the influence of the following factors on the black-tailed prairie dog:

- The present or threatened destruction, modification, or curtailment of its habitat or range;
- Overutilization for commercial, recreational, scientific, or educational purposes;
- Disease or predation;
- The inadequacy of existing regulatory mechanisms;
- Other natural or manmade factors affecting its continued existence.

The Service must make a judgement through an evaluation of these factors whether the status of a species is such, or is not such, that it meets the definition of "endangered" or "threatened." The definition for "threatened" includes the wording "likely to become" that requires the Service to demonstrate that a species is "likely to become an endangered species" (not extinct) "within the foreseeable future throughout all or a significant portion of its range."

Several important threshold must be met before it can be determined that a species is threatened. First, demonstrable or likely potential effects on the species must be identified. Moreover, these effects must be significant enough to be characterized as threats. This characterization cannot be made unless the degree of significance of an effect or effects is such that the influence on the status of the species is sufficient for it to meet the "threatened" definition. Secondly, this definition requires a significant demonstrable effect (i.e. a threat) that is or may become apparent "within the foreseeable future." This timing constraint must be evaluated with consideration for the biology of the species under evaluation and for the particular threat or threats that it faces. Lastly, with regard to "all or a significant portion of its range," we judged the influence of the threat related to disease to be applicable at present or in the near term throughout the range of the black-tailed prairie dog.

Three major impacts have had a substantial influence on black-tailed prairie dog populations. The first major impact on the species was the initial conversion of prairie grasslands to cropland in the eastern portion of its range from approximately the 1880's-1920's. The second major impact was large-scale chemical control efforts to reduce competition between prairie dogs and domestic livestock conducted from approximately 1918-1972. Recurring limited recovery and declines have occurred in black-tailed prairie dog populations remaining after these impacts. The third major impact was the inadvertent introduction of an exotic disease, sylvatic plague, from the Old World into North American ecosystems around 1900, with the first recorded impacts in published literature on the black-tailed prairie dog in 1946. The influence of plague on black-tailed prairie dog populations is recent in a historical sense, and especially in a biological sense. Its apparent influence may have been masked when black-tailed prairie dog numbers were maintained at very low levels by chemical control, but it has likely had significant depressant effects on most remnant populations in the last 10-15 years.

There is considerable overlapping of the influences of the factors addressed in this candidate assessment, specifically with regard to: habitat impacts (see Factor A) and disease (see Factor C), recreational shooting (see Factor B) and inadequate regulatory mechanisms (see Factor D), and inadequate regulatory mechanisms (see Factor D) and chemical control (see Factor E). Consequently, pertinent discussions are inter-related. For example, recreational shooting is discussed primarily under Factor B - overutilization, but it is also appropriate to consider it under Factor D - regulatory mechanisms. Notably, Factor A (habitat impacts) is much more specific in its criteria of "present or threatened" and "destruction, modification, or curtailment" than are the other factors.

A description of the information we have received regarding effects, and potential threats, related to those factors is described below.

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

Summary and Reevaluation of Previous Information - Historically, black-tailed prairie dog occupied and potential habitat destruction occurred due to cropland development, urbanization, changes in vegetative communities, burrow deterioration, and fragmentation. The presence of plague in the species' range may be considered a modification of habitat inasmuch as the quality of the habitat has been degraded. This threat is discussed under Factor C (disease or predation). Similarly, chemical control can be considered a curtailment of habitat inasmuch as the quantity of occupied habitat has been reduced, often to the point of complete local eradication of source populations that could provide for recovery of the species in some areas. This threat is discussed under Factor E (other natural or manmade factors).

The most significant cause of habitat destruction that we are able to quantify is cropland development. In the United States approximately 37 percent of the suitable habitat within the species' range has been converted to cropland uses (Black-footed Ferret Recovery Foundation, in litt. 1999). However, it was noted in the 12-month Finding that the current threat of habitat loss through cropland conversion is much less than in the early days of agricultural development in the Great Plains; and that a considerable amount of potential unoccupied habitat remains. Urbanization occurs primarily along the Colorado Front Range, but this effect is not believed to be significant regarding the species' overall population. Some changes in vegetative communities (from grassland to shrubland) have limited the species in the southwestern portion of the its range. Burrow deterioration is a speculative cause of habitat destruction, but its overall effect on the species is unknown.

New Information - The Natural Resources Conservation Service quantified land cover/land use changes by State from 1982-1997

(http://www.nhq.ncs.usda.gov/NRI/1997/summary_report/ original/table2.html). The 11 States within the historic range of the black-tailed prairie dog experienced a 10 percent loss of cropland and a 2 percent loss of rangeland during this time period. The loss of rangeland on an annual basis that could serve as black-tailed prairie dog potential habitat appears to be relatively small compared to the amount of rangeland in the species' range. Most of the decrease in cropland can be attributed to lands enrolled in the Conservation Reserve Program. However, when the amount of current occupied habitat is contrasted with the amount of remaining rangeland (potential habitat) it is evident that sufficient potential habitat still occurs in each of the 11 States within the historic range of the species to accommodate large expansions of black-tailed prairie dog populations. This conclusion is supported by Sidle et al. (2001), who noted that although substantial areas of grassland have

been converted to cropland in the northern Great Plains, vast areas of suitable habitat for colonization and expansion of black-tailed prairie dogs remain. No information was received regarding the conversion of specific black-tailed prairie dog occupied habitat to cropland.

Gilpin (University of California, in litt. 2001) considers habitat fragmentation a serious threat which could impact future viability of the black-tailed prairie dog. However, at this time we are unable to quantify the impacts due to fragmentation or to draw inferences form the effects of fragmentation on species closely related to the black-tailed prairie dog; consequently the magnitude of this threat is unknown.

Conclusions - We conclude that present or threatened habitat destruction is not a threat to the species, although large effects due to this factor have occurred in the past. However, we do believe that habitat modification (see Factor C) remains a moderate threat and habitat curtailment (see Factor E) remains a low threat. Threats related to habitat modification are considered imminent even though they are not occurring throughout the species' range and new information indicates that individual black-tailed prairie dogs may not be as susceptible to disease exposure as previously determined (see Factor C). The threats related to habitat curtailment are considered non-imminent because they are mostly due to potential threats regarding large complexes (see Factor E).

Table 2 summarizes our evaluation of various aspects of Factor A.

Table 2. Potential/Actual Threats, due to Factor A, Influencing the Black-tailed Prairie Dog so as to meet the Definition of "Threatened"

			Magnitudo	Imama adia av	
Factor			Magnitude of Threat	Immediacy of Threat	Comments
A.1. present	destruction	habitat	no threat	no threat	recent trends do not support
A.2. present	modification	habitat	moderate	imminent	due to impacts from Factor C (disease)
A.3. present	curtailment	habitat	no threat	no threat	recent data do not support
A.4. threatened	destruction	habitat	no threat	no threat	recent trends do not support
A.5. threatened	modification	habitat	moderate	imminent	due to impacts from Factor C (disease)
A.6. threatened	curtailment	habitat	low	non-imminent	due to Factor E (chemical control) on Tribal lands

B. Overutilization for commercial, recreational, scientific, or educational purposes.

Summary and Reevaluation of Previous Information - We previously determined that effects due to scientific or educational purposes were not threats. Also, we concluded that commercial use of the species via the pet trade was not a threat. We concluded that recreational shooting could be a low threat in some circumstances.

New Information - Many of the States with significant amounts of public lands are experiencing greater shooting pressure on prairie dogs than previously estimated, and are implementing regulations to better monitor and control this activity. These regulations are described under Factor D. Rosmarino et al. (Forest Guardians, in litt. 2001) stated that black-tailed prairie dog densities are lower now than historically due to shooting. They noted that densities at Conata Basin in South Dakota increased from 6-10 prairie dogs per acre to 16-24 prairie dogs per acre following a shooting closure. However, we are not aware of data that support a conclusion that reductions in density are sufficient to reduce population persistence at a given site. The Montana Shooting Sports Association questions why regulations on shooting are necessary when this was the only factor in the 12-month Finding to be considered a low threat (Marbut, Montana Shooting Sports Association, in litt. 2001).

Conclusions - We are aware that recreational shooting can significantly reduce black-tailed prairie dog population densities at specific sites, but no information is available that demonstrates that any black-tailed prairie dog population has been extirpated or nearly extirpated by this activity. We acknowledge the possibility that this scenario may have occurred in isolated circumstances, but believe recreational shooting interest is generally not high where populations are at low levels. Black-tailed prairie dog populations can recover from very low numbers subsequent to disease events and can likely recover from recreational shooting in a similar fashion. We now conclude that effects due to recreational shooting do not rise to the level of a threat pursuant to the definitions and constraints of the Act.

Table 3 summarizes our evaluation of various aspects of Factor B.

Table 3. Potential/Actual Threats, due to Factor B, Influencing the Black-tailed Prairie Dog so as to meet the Definition of "Threatened"

Factor		Magnitude of Threat	Immediacy of Threat	Comments
B.1. overutilization	commercial	no threat	no threat	pet trade not significant
B.2. overutilization	recreational	no threat	no threat	rec. shooting not demonstrated significant
B.3. overutilization	scientific	no threat	no threat	
B.4. overutilization	educational	no threat	no threat	

C. <u>Disease or predation</u>

Summary and Reevaluation of Previous Information - Sylvatic plague is likely the most important factor adversely influencing black-tailed prairie dog populations throughout a significant portion of the species' range. Approximately 66 percent of the species' historic range has been affected by plague (Black-footed Ferret Recovery Foundation, in litt. 1999). Plague is an exotic disease foreign to the evolutionary history of North American species. Plague is caused by the bacterium *Yersinia pestis*, which fleas acquire from biting infected animals and can then transmit via a bite to other animals. The disease can also be transmitted directly between animals. Some rodent species may act as carriers of the disease or infected fleas and show little or no symptoms. Conversely, black-tailed prairie dogs demonstrate nearly 100 percent mortality when they contract plague (Barnes 1993, Cully and Williams 2001) and cannot be considered carriers.

New Information - Marbut (Montanan Shooting Sports Association, in litt. 2002) stated that plague should not be considered a legitimate factor in making a listing decision because it has not been proven that plague is a "new and artificial factor in prairie dog populations." However several authors including Barnes (1993), Biggins and Kosoy (2001), Cully (1989), Ecke and Johnson (1952), Eskey and Haas (1940), and Olsen (1981) concluded that plague was recently introduced into North America. Moreover, the lack of variability in DNA strains present in the plague bacterium found in North America conclusively indicates a recent introduction (Biggins and Kosoy 2001). Apparently, black-tailed prairie dogs have not evolved concurrently with plague and have not evolved biological resistence or other mechanisms to counter its influence.

Recent laboratory research indicates that at low levels of exposure a very small percentage of black-tailed prairie dogs may show some immune response and consequently some resistance to plague (Rocke, U.S. Geological Survey, pers. comm. 2001), similar to what has been reported in Gunnison's (Cully et al. 1997) and white-tailed prairie dogs (Biggins, U.S. Geological Survey, pers. comm. 2002). The Center for Disease Control recently reported that seroconversion (evidence of some immune response) occurred in 2 out of 65 black-tailed prairie dogs that were collected following a plague event at Pawnee National Grassland (Antolin, Colorado State University pers. comm. 2002). Nonetheless, the black-tailed prairie dog is at high risk to plague due to a combination of low resistance and high sociality (Biggins and Kosoy 2001).

It has been suggested that the responses of black-tailed prairie dog populations to plague may vary based on their population density (Cully, U.S. Geological Survey, pers. comm. 2001). This hypothesis is supported by the patterns described at the Rocky Mountain Arsenal and the Cimarron National Grassland. The relative likelihood of plague transmission in prairie dogs from flea bites versus from other prairie dogs is unknown, but is being investigated. It may be that survival of some individuals in low density or isolated populations is facilitated by the necessity of relatively high exposure rates for any given individual to contract the disease. A

single or even multiple flea bites may not have a high enough dose for this to occur (Rocke, U.S. Geological Survey, pers. comm. 2001). In contrast, if plague is spread pneumonically from animal to animal, a much larger dose is transferred than from a flea bite and in a large, densely populated complex the impacts could be significant. Accordingly, a population dynamic may have developed that somewhat protects low density, isolated black-tailed prairie dog populations from extirpation, even with infected fleas resident in the habitat of surviving prairie dogs. This situation is quite different from historic black-tailed prairie dog populations where sociality provided important cooperative behavior benefits.

Major plague impacts on black-tailed prairie dogs have been reported in the western portion of the species' range, lesser population impacts have occurred further east, and positive titres indicating exposure to plague have been detected in some mobile carnivore species still further east. The Rocky Mountain Arsenal National Wildlife Refuge in Colorado has experienced at least three major epizootics that have reduced black-tailed prairie dog occupied habitat from 4,574 acres (1,851 hectares) in 1988 to 618 acres (250 hectares) in 2001, with short-term, partial recovery between epizootics (Seery, U.S. Fish and Wildlife Service, in litt. 2001). East of the Arsenal, on the Cimarron National Grassland in Kansas, Cully and Williams (2001) reported that the area occupied by black-tailed prairie dogs has been reduced, but fairly stable over the past 10 years despite the fact the plague was documented in 1949, 1997, and 1999. The data here consistently indicates that about 30 percent of identifiable colony acreage is inactive at this site. Cully and Williams suggested that in the presence of plague, black-tailed prairie dogs will probably either survive in complexes of small colonies that are usually greater than 2 miles (3 kilometers) from their nearest neighbor colonies or experience severe population fluctuations. Lomolino and Smith (2001) reached similar conclusions in Oklahoma. Cully and Williams (2001) further noted that until more is understood about plague, "it is unwise to assume that plague will not reach previously unaffected colonies east of the current distribution."

Plague outbreaks documented during 2001 and the acreages impacted are described under Distribution, Abundance and Trends for Fort Carson, Pinon Canyon, Pueblo Army Depot, and Rocky Mountain Arsenal in Colorado; for Phillips County, Fort Belknap Reservation, and Northern Cheyenne Reservation in Montana; and for Thunder Basin National Grassland in Wyoming. The plague epizootic at Thunder Basin was particularly significant because it was one of the few remaining complexes greater than 10,000 acres (4,000 hectares). It resulted in more plague activity than previously noted in Wyoming, and it brought plague very close to South Dakota and some of the last remaining plague-free large complexes. The Colorado Division of Wildlife noted that widespread plague outbreaks in 2001 could indicate the beginning of an "up cycle" (Pusateri, Colorado Division of Wildlife, in litt. 2001). The extent to which this pattern is affecting overall black-tailed prairie dog populations is not clear, but complexes impacted by plague do not appear to recover to their former numbers (U.S. Fish and Wildlife Service 2000).

Conclusions - We conclude that impacts due to predation continue to not be a threat. We also conclude that the apparent magnitude of the disease threat has been diminished to some degree by new information that indicates that limited immune response is possible in some individuals and by new information that a population dynamic may have developed in low density, isolated populations that may contribute to the persistence of depressed populations. Nevertheless, we conclude that the magnitude of this threat to the black-tailed prairie dog remains moderate due to other influences. We have reviewed the projection in the 12 month Finding which hypothesized likely future black-tailed prairie dog population trends. We conclude that this projection remains appropriate despite new information that infers that the magnitude of the disease threat to the species may be somewhat less than previously determined.

We conclude that the immediacy of the disease threat to the black-tailed prairie dog is imminent because of the apparent 100% mortality when prairie dogs contract the disease through the direct transmission between animals.

Based on recent trends of statewide and site-specific declining black-tailed prairie dog occupied habitat in Montana, Colorado, and Oklahoma, we project continuing declines across most of the species' range. Also, we conclude that plague occurrence is likely throughout the species' range in the foreseeable future. These threats are sufficient for the species' status to meet the "threatened" definition in the Act. We conclude that the presence of plague on the landscape negatively modifies significant amounts of occupied and potential habitat (see Factor A) at present and that threatened modification of the remainder of the species' range is likely. Impacts on the species due to this disease continue to be a moderate threat.

Table 4 summarizes our evaluation of various aspects of Factor C.

Table 4. Potential/Actual Threats, due to Factor C, Influencing the Black-tailed Prairie Dog so as to meet the Definition of "Threatened"

Factor	Magnitude of Threat	Immediacy of Threat	Comments
C.1. disease	moderate	imminent	also affects Factor A (habitat) through modification of habitat
C.2. predation	no threat	no threat	

D. The inadequacy of existing regulatory mechanisms

Summary and Reevaluation of Previous Information - There are many jurisdictional entities across the range of the black-tailed prairie dog whose authorities and lack of authorities could affect the status of the species. Pertinent background information is presented below for various States, Tribes, and Federal agencies. We evaluated various influences on the species with regard to whether effects that could rise to the level of a threat were exacerbated by inadequate regulatory mechanisms or lessened by adequate regulatory mechanisms.

Specifically, we evaluated the influences of recreation shooting, chemical control, and limitations that could preclude achieving management goals designed to ameliorate the influences of plague.

New Information - Several States have established or proposed recreational shooting regulations and other regulatory changes related to the official status of the species. Few States have any meaningful regulations or have made any proposals to regulate chemical control of black-tailed prairie dog populations.

Representatives from each State wildlife agency within the historic range of the species continue to work on the Black-tailed Prairie Dog Conservation Team. The Team has developed "A Multi-State Conservation Plan For The Black-tailed Prairie Dog, *Cynomys ludovicianus*, in the United States" (Luce 2001). The purpose of this multi-state plan is to provide standards that the 11 States will use to implement management of the species. Goals include the development of management plans and possibly umbrella Candidate Conservation Agreements with Assurances (CCAA) between each State and the Service. The overall management objective is to provide population viability for the species and to demonstrate through monitoring the presence of stable to increasing populations. Important management efforts include threat identification and abatement.

Most States have completed or nearly completed surveys of black-tailed prairie dog occupied habitat and some conservation efforts have been enacted or proposed. Several management plans have been drafted which may ultimately be useful in the development of CCAAs. Ten-year objectives for occupied habitat (one percent of modified historic potential habitat) have been developed by the Conservation Team for each State. These objectives result in a proposed nationwide total of 1,693,695 acres (685,946 hectares) of black-tailed prairie dog occupied habitat. This would be a 22 percent increase over the States' most recent estimate of 1,383,000 acres (560,115 hectares) of currently occupied habitat (Table 1). Most States have agreed to these objectives, as stated in various draft management plans (excepting Montana, North Dakota, and Oklahoma), although formal endorsement by the States has not been completed. The individual and collective habitat goals of the Multi-State Plan appear to be only a small percentage of the amount of historic occupied habitat that once occurred, nevertheless, these goals appear to be a reasonable adaptive management effort to conserve this species.

The Multi-State Plan was recently reviewed by a group established by the Wildlife Management Institute (Andelt et al., in litt 2002). The group concluded that "the plan generally represents a reasonable and defensible approach to achieving long-term conservation of the species. Keys to success in this plan include: implementation and sustained commitment on the part of the involved state wildlife agencies; a science-driven adaptive management approach; an emphasis on state and federal public lands; and cooperative relationships with private landowners, including tribal entities." The group also noted the importance of rigorous monitoring, especially regarding plague and the amount of

occupied habitat. They concluded that the occupied habitat objectives were a "reasonable starting point," with the inclusion of an adaptive management approach. This review addressed factors specified in the Service's draft PECE (Policy for Evaluation of Conservation Efforts), specifically: the likelihood that the conservation effort will be implemented, and the likelihood that the conservation effort will be effective.

Nine Tribes within the historic range of the species have developed an Inter-tribal Prairie Ecosystem Restoration Consortium. This working group is also pursuing development of management plans and umbrella CCAAs along the general guidelines of the State approach. Additionally, the Cheyenne River Sioux Tribe in South Dakota is proceeding independently in a similar fashion.

The National Wildlife Federation supports an umbrella approach by the States to prairie dog management, but has noted that real conservation benefits for prairie dogs that might justify a change in status will result only when there are significantly more occupied acres, clearly adequate regulatory mechanisms, and a reduction in the other threats to the species (Johnson, National Wildlife Federation, in litt. 2001). Other environmental groups have expressed concerns that interstate planning is hindered by the lack of full cooperation from states within the range of the species and that management plans emphasize plans rather than actions (Rosmarino, Forest Guardians et al. in litt. 2001).

A review of the current status of State, Tribal, and Federal regulatory mechanisms, as well as any proposed changes, follows below. We evaluated the influence of inadequate regulatory mechanisms with regard to recreational shooting, chemical control, and limitations on management that could preclude efforts to address disease. Inadequate regulatory mechanisms must relate to another factor to be applicable. The Service does not consider recreational shooting to be a threat in the context of the Act (see Factor B).

<u>Arizona</u> - In 1999, the hunting season for black-tailed prairie dogs, which are extirpated from the State, was closed (Shroufe, Arizona Game and Fish Department, <u>in litt.2001</u>). Arizona requires a permit and training for toxicant use.

Arizona is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999). The black-tailed prairie dog is listed as endangered on the Arizona "Threatened Native Wildlife" list (Arizona Game and Fish Department 1988). Currently, the Arizona Game and Fish Department classifies both prairie dog species native to the State (black-tailed and Gunnison's) as nongame mammals. The Department submitted their black-tailed prairie dog management plan (Van Pelt et al. 2001) to the Commission in October 2001. The Commission did not approve the management plan, but directed the Department to continue the 12-step process of reintroduction planning. Consequently, the management plan is still in draft form. The National Wildlife Federation considers the State's management plan to be generally well-crafted, but has expressed concern regarding the Commission's decision to

postpone consideration of the plan (Johnson, National Wildlife Federation, in litt. 2001). In their management plan, the Arizona Game and Fish Department supports the 10-year objective for occupied habitat of 4,594 acres (1,861 hectares) developed by the Black-tailed Prairie Dog Conservation Team. Unless Arizona Game and Fish Department receives the support of their Commission, it appears that the black-tailed prairie dog occupied habitat objective in Arizona may not be achieved. Management procedures to maintain and monitor the species, if it is reintroduced, are under development.

<u>Colorado</u> - Currently, the Colorado Division of Wildlife considers the black-tailed prairie dog a game species. The Colorado Division of Wildlife Commission prohibited sport hunting of the species on public and private lands effective September 1, 2001; however, landowners and their designated agents are still permitted to shoot prairie dogs causing damage to their property.

The Colorado Department of Agriculture designates the species as a pest. No change in pest status has been proposed at this time. Chemical control is jointly regulated by the Colorado Department of Agriculture and Colorado Division of Wildlife. The Colorado Wildlife Commission has authority to eliminate the use of toxicants on prairie dogs, but there would be strong opposition to such a ban (Pusateri, Col. Div. Of Wildlife, in litt. 2002). Apparently, chemical control is not limited except as to appropriate pesticides. No information on the extent of this activity is available.

In 1999, the State Legislature passed a bill prohibiting translocation of prairie dogs and other species without consent of the receiving county's commissioners (Van Pelt 1999). This restriction could limit prairie dog conservation efforts such as translocation or reintroduction. Colorado is not a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999). An intrastate Memorandum of Understanding (MOU) for Prairie Dog Management in Colorado was signed in 2000 by several Colorado agencies and Federal agencies (Pusateri, Colorado Division of Wildlife, in litt. 2001).

A work plan has been developed and a black-tailed prairie dog conservation plan, as well as a CCAA, are being drafted. A landowner incentive program is also being developed which is currently funded for 3 years for \$600,000. This would allow approximately 20,000 acres (8,000 hectares) of occupied habitat to be enrolled (Pusateri, Colorado Division of Wildlife, in litt. 2001). Colorado Division of Wildlife staff at the Black-tailed Prairie Dog Conservation Team meeting on August 29, 2001 in Billings, Montana indicated that they did not object to the 10-year objective for occupied habitat of 255,773 acres (103,588 hectares) developed by the Black-tailed Prairie Dog Conservation Team. This objective is approximately 45,000-245,000 acres (18,000-99,000 hectares) less than the State's most recent estimate of occupied habitat. It appears that the black-tailed prairie dog occupied habitat objective in Colorado may have already been achieved. Management procedures to maintain and monitor the species are under development.

<u>Kansas</u> - Currently, the Kansas Department of Wildlife and Parks requires a hunting license to shoot prairie dogs for residents and nonresidents. The season is year-round with no limits.

The State considers the black-tailed prairie dog an agricultural pest and control is mandated if an adjoining landowner files a complaint (Knowles 1995). In recent years, some counties have invoked "Home Rule" to take authority for prairie dog control from the townships and impose mandatory control requirements. Landowners are given the opportunity to control prairie dogs on their land; if they fail to do so it is done by the county at the landowner's expense (Van Pelt 1999). Control requires a State permit (Lambley, Kansas Department of Agriculture, in litt. 2001), but no other information on the extent of this activity is available.

Kansas is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999). Kansas has a final draft management plan (Kansas Black-tailed Prairie Dog Working Group 2001) which includes among its objectives the establishment of regulatory protection. In their management plan, the Kansas Department of Wildlife and Parks supports the 10-year objective for occupied habitat of 148,596 acres (60,181 hectares) developed by the Black-tailed Prairie Dog Conservation Team. This objective is approximately 24,000 acres more than the State's most recent estimate of occupied habitat. Management procedures to maintain and monitor the species are under development and suggest that this objective may be achieved.

Montana - Currently, the Montana Department of Fish, Wildlife and Parks requires no license to shoot prairie dogs and no limits on take or season exist. The Department protects prairie dogs on two State parks (Graham, Montana Department of Fish, Wildlife and Parks, in litt. 1998).

The Montana Department of Agriculture classifies the species as a "vertebrate pest" and assists landowners in control of prairie dogs if requested, but control is not mandated (Sullins, Montana Department of Agriculture, pers. comm. 1999). Apparently, chemical control is not limited except as to appropriate pesticides. No information on the extent of this activity is available.

Montana is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999).

The black-tailed prairie dog is identified as a State "species of special concern" (Flath 1998).

The black-tailed prairie dog is in the process of being designated as "nongame wildlife in need of management" with authority under Montana Department of Fish, Wildlife and Parks (Hagener, Montana Department of Fish, Wildlife and Parks, in litt. 2001). The Montana Commission gave approval to the State's black-tailed prairie dog management plan (Montana Prairie Dog Working Group. 2001) in January, 2001. Montana Department of Fish, Wildlife and Parks staff do not accept the 10-year objective for occupied habitat of 240,367 acres (97,349 hectares) developed by the Black-tailed Prairie Dog Conservation Team. The State management plan has adopted an objective of 125,000-145,000 acres (51,000 - 59,000 hectares). This objective is approximately 100,000 acres (40,000 hectares) less than the objective developed by the Conservation Team and approximately 45,000 acres (18,000 hectares) more than the State's most recent estimate of occupied habitat. The National Wildlife Federation has expressed concerns that the acreage objective in the State management plan is considerably less than the objective established by the Conservation Team (Johnson, National Wildlife Federation, in litt. 2001). Management procedures to maintain and monitor the species are under development, but suggest that the objective established by the Conservation Team may not be achieved.

<u>Nebraska</u> - Currently, Nebraska considers the black-tailed prairie dog an unprotected nongame species that can be taken in any manner without restrictions on shooting or control activities. Permits are not required for residents; nonresidents must have a small-game hunting permit.

Apparently, chemical control is not limited except as to appropriate pesticides. Information is available regarding the extent of chemical control in Nebraska (see Factor E). However, the inadequacy of existing regulatory mechanisms with regard to chemical control is not addressed in State regulations.

Nebraska is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999).

A draft black-tailed prairie dog management plan has been completed (Nebraska Game and Parks Commission 2001), but has not been formally adopted. This management plan recommends changing the legal status of the black-tailed prairie dog to a "species in need of conservation." It also notes that additional shooting regulations would be considered if populations drop below some predetermined percentage of the objective. The Conservation Alliance of the Great Plains commented that the plan did not meet the minimum requirements of a conservation plan under State law (Sutton, Conservation Alliance of the Great Plains, in litt. 2001). The National Wildlife Federation noted that more on-the-ground benefits were needed for the species (Graber, National Wildlife Federation, in litt. 2001). In their draft management plan, the Nebraska Game and Parks Commission supports the 10-year objective for occupied habitat of 137,254 acres (55,588 hectares) developed by the Black-tailed Prairie Dog Conservation Team. This objective is approximately

67,000 - 110,000 acres (27,000-45,000 hectares) more than the State's most recent estimate of occupied habitat. Some management procedures to maintain and monitor the species are under development, but it is uncertain if this objective will be achieved.

<u>New Mexico</u> - Currently, the black-tailed prairie dog remains "unprotected under state laws" (Schmitt, New Mexico Department of Game and Fish, <u>in litt</u>. 2001). New Mexico has no bag limits or seasons for shooting prairie dogs. Residents do not need a license; nonresidents are required to have a current nonresident hunting license.

Apparently, chemical control is not limited except as to appropriate pesticides. No information on the extent of this activity is available.

New Mexico is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999). A black-tailed prairie dog management plan has been drafted (New Mexico Black-tailed Prairie Dog Working Group 2001), but has not yet been submitted to the New Mexico Game Commission. The draft management plan calls for evaluating the adequacy of existing regulations and supports the development of a CCAA. In their draft management plan, the New Mexico Department of Game and Fish supports the 10-year objective for occupied habitat of 87,132 acres (35,288 hectares) developed by the Black-tailed Prairie Dog Conservation Team. This objective is at least 37,000 acres (15,000 hectares) more than the State's most recent estimate of occupied habitat. Some management procedures to maintain and monitor the species are under development, but this objective may not be achieved.

North Dakota - Currently, North Dakota Game and Fish Department classifies the black-tailed prairie dog as a nongame species. Residents are not required to have a hunting license to shoot prairie dogs, however nonresidents are required to purchase a license. There are no bag limits or seasons for prairie dogs. A guidebook is available to aid prairie dog shooters in finding colonies (North Dakota Game and Fish Department, undated).

The State considers the black-tailed prairie dog a pest. The State Department of Agriculture and county weed boards have regulatory authority over control efforts (Van Pelt 1999). Apparently, chemical control is not limited except as to appropriate pesticides. No information on the extent of this activity is available.

North Dakota is not a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999). The State Legislative Assembly passed a resolution urging the Service not to list the species (North Dakota Legislative Assembly, in litt. 1999). North Dakota has drafted a black-tailed prairie dog management plan (North Dakota Game and Fish Department 2001). The plan notes that the Department does not believe the species is threatened. The plan's goal is to maintain a biologically viable population of the species in North Dakota, which it considers the present population to be. This goal does not address the Act's direction to list species across their range even if some populations may be relatively secure in some areas. No specific regulatory changes have been proposed or enacted at present. The National

Wildlife Federation believes that this management plan "includes none of the elements essential to a management plan for any species" (Miller, National Wildlife Federation, in litt. 2001). North Dakota Game and Fish Department does not accept the 10-year objective for occupied habitat of 100,551 acres (40,700 hectares) developed by the Black-tailed Prairie Dog Conservation Team. Instead their management plan proposes to maintain the current occupied habitat. The North Dakota Plan objective is approximately 67,000 acres (27,000 hectares) less than the objective developed by the Conservation Team. Few management procedures to maintain and monitor the species are under development, which suggests that the objective established by the Conservation Team will not be achieved.

Oklahoma - Currently, a license for recreational shooting is required by residents and nonresidents.

The Oklahoma Department of Wildlife Conservation classifies the black-tailed prairie dog as a Category II Mammal Species of Special Concern and requires a permit prior to any chemical control. Prairie dog eradication is no longer mandatory in Oklahoma, but is assisted by some State and local governments. Prairie dogs cannot be reduced in any county to fewer than 1,000 individuals and control is not permitted on public lands (Van Pelt 1999). No other information on the extent of this activity is available.

Oklahoma is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999). A black-tailed prairie dog management plan (Hoagland 2001) has been drafted. Proposed management strategies include continued regulation of recreational shooting and chemical control. The Oklahoma Department of Wildlife Conservation does not accept the 10-year objective for occupied habitat of 68,657 acres (28,000 hectares) developed by the Black-tailed Prairie Dog Conservation Team. Instead their management plan has set an objective of 40,000 acres (16,200 hectares). Their objective is approximately 29,000 acres (12,000 hectares) less than the Conservation Team's objective and 21,000 acres (8,500 hectares) more than the State's most recent estimate of occupied habitat. Some management procedures to maintain and monitor the species are under development, but suggest that the objective established by the Conservation Team may not be achieved.

<u>South Dakota</u> - South Dakota Game, Fish and Parks Commission established a closure on recreational shooting on public lands from March 1 - June 14 (Cooper, South Dakota Game, Fish and Parks, in <u>litt.</u> 2001).

South Dakota Game, Fish and Parks Commission passed a new State law, effective July 1, 2001, which removed the black-tailed prairie dog from the state list of declared pests and designated it a "species of management concern." Apparently, chemical control is not limited except as to appropriate pesticides. Information on the extent of this activity is

discussed under Factor E (chemical control). The draft management plan includes threshold acreages below which chemical control would cease. Regulatory mechanisms pertaining to chemical control may be important in this State due to the amount of poisoning which occurs (see Factor E).

South Dakota is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999). A black-tailed prairie dog management plan has been drafted (South Dakota Prairie Dog Work Group 2001) and a public comment period on it recently closed. The National Wildlife Federation considers the South Dakota management plan a well-drafted plan that seriously addresses the important issues (Johnson, National Wildlife Federation, in litt. 2001). The State Legislature passed a law in February 2002 requiring legislative approval of any management plan that includes incentive payments to landowners for prairie dog conservation or limits landowner rights to kill the animals. Final legislative action is not expected until 2003 at the earliest. In their draft management plan, South Dakota Game, Fish and Parks supports the 10-year objective for occupied habitat of 199,472 acres (81,000 hectares) developed by the Black-tailed Prairie Dog Conservation Team. This objective is approximately 57,000 acres (23,000 hectares) more than the State's most recent estimate of occupied habitat. Approximately 85 percent of potential habitat is on non-tribal lands, therefore the State's portion of the 10-year objective would be approximately 170,000 acres (69,000 hectares). Management procedures to maintain and monitor the species are under development and suggest that the objective may be achieved.

<u>Texas</u> - Currently, the Texas Parks and Wildlife Department designates the black-tailed prairie dog as a nongame species. A license is required to hunt prairie dogs, but there is no season or bag limit.

In 1999 a new regulation was established which requires a nongame collection or dealer's permit to possess more than 10 prairie dogs or to sell any number of prairie dogs (Van Pelt 1999). This law does not regulate the killing of prairie dogs for recreational, agricultural, or nuisance purposes. The Texas Health and Safety Code authorizes counties to control prairie dogs and gives Texas Department of Agriculture the responsibility of providing control information to requesting counties (Van Pelt 1999). Apparently chemical control is not limited except as to appropriate pesticides. No information on the extent of this activity is available.

Texas is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999). State statutes prohibit listing the black-tailed prairie dog as a State endangered species. A black-tailed prairie dog management plan has been drafted (Texas Black-tailed Prairie Dog Working Group 2000). The plan notes that the black-tailed prairie dog is a sensitive and declining species in Texas. Goals include the development of an amendment to change reference to the species in State legislative regulations from "pest species" to "non-game." It is uncertain whether the species' status as a nongame animal under Texas Parks and Wildlife Code or its pest status under Texas Health and Safety Code would take precedence. A

CCAA has also been drafted (Texas Black-tailed Prairie Dog Working Group 2001). In their draft management plan, the Texas Parks and Wildlife Department supports the 10-year objective for occupied habitat of 293,129 acres (119,000 hectares) developed by the Black-tailed Prairie Dog Conservation Team. This objective is approximately 93,000 - 143,000 acres (38,000-58,000 hectares) more than the State's most recent estimate of occupied habitat. Management procedures to maintain and monitor the species are under development and suggest that the objective may be achieved.

<u>Wyoming</u> - Currently, the Wyoming Game and Fish Department considers the black-tailed prairie dog a nongame wildlife species and a species of special concern. No license is required to shoot prairie dogs, and there is no season, bag limit, or restriction on method of take (Van Pelt 1999).

The Wyoming Department of Agriculture lists the species as a pest. The Wyoming Weed and Pest Control Act of 1973 authorizes counties to enter private property to control prairie dogs if damage has been documented to neighboring landowners (Knowles 1995). Apparently, chemical control is not limited except as to appropriate pesticides. No information on the extent of this activity is available.

Wyoming is a signatory to the interstate Conservation Assessment and Strategy (Van Pelt 1999).

A black-tailed prairie dog management plan has been drafted (Wyoming Black-tailed Prairie Dog Working Group 2001). Plan objectives include identifying possible regulatory changes. The National Wildlife Federation noted that this is a comprehensive management plan that seriously addresses most of the issues (Johnson, National Wildlife Federation, in litt. 2001). The draft plan was rejected by the Wyoming Game Commission in December, 2001. In their draft management plan, the Wyoming Game and Fish Department supports the 10-year objective for occupied habitat of 158,170 acres (64,000 hectares) developed by the Black-tailed Prairie Dog Conservation Team, but intends to manage for no less than 200,000 acres (81,000 hectares). The State's management goal is approximately 100,000 acres (41,000 hectares) less than the State's most recent estimate of occupied habitat. It appears that the black-tailed prairie dog occupied habitat objective in Wyoming may have already been achieved. Management procedures to maintain and monitor the species are under development.

<u>Cheyenne River Sioux Tribe</u> (in South Dakota) - Currently hunting seasons are year-round and without limits on Tribal lands. However, if prairie dog populations decline below management goals, season lengths and/or permit numbers will be restricted (Bourland and Dupris, Cheyenne River Sioux Tribe, <u>in litt</u>. 1998; Dikeman et al., Cheyenne River Sioux Tribe, <u>in litt</u>. 1999).

The Tribe does not classify the prairie dog as a pest and does not require or encourage their eradication. The Tribe drafted a Prairie Ecosystem Management Plan (Croxen et al. 1992) that prohibits chemical control on 44,100 acres (17,860 hectares) of black-tailed prairie dog occupied habitat.

The Tribe has drafted a preliminary umbrella CCAA. The Tribe agrees with the basic approach taken by the States' Black-tailed Prairie Dog Conservation Team to establish 10-year objectives and intends to manage for 13,000 acres (5,300 hectares) as a minimum acreage to be maintained (Larson, U.S. Fish and Wildlife Service, pers. comm. 2002). It appears that the black-tailed prairie dog occupied habitat objective on Tribal lands has already been achieved. Management procedures to maintain and monitor the species are in place or under development.

<u>Crow Creek Sioux Tribe</u> (in South Dakota) - Currently the Tribe allows recreational shooting and notes that it appears to have no effect on prairie dog numbers (Miller, Crow Creek Sioux Tribe, <u>in litt</u>. 1998). The Tribe prohibits chemical control.

The Tribe has drafted a preliminary umbrella CCAA which suggests 1,000 acres (400 hectares) as a minimum occupied habitat to be maintained. It appears that the black-tailed prairie dog occupied habitat objective on Tribal lands has already been achieved. Management procedures to maintain and monitor the species are in place or under development.

<u>Lower Brule Sioux Tribe</u> (in South Dakota) - The Tribe currently allows recreational shooting.

Apparently, chemical control is not limited except as to appropriate pesticides. No information on the extent of this activity is available. Under the proposed management plan, chemical control would be prohibited without a permit from their Department of Wildlife, Fish and Recreation and concurrence from BIA and the Tribal Chairman.

The Tribe has drafted a management plan (Lower Brule Sioux Tribe Department of Wildlife, Fish and Recreation 2001). This management plan changes the status of the species from unprotected to protected. The plan states that the Tribe will manage the species at levels that will be at least 1 percent of the historic potential habitat, approximately 2,000 acres (800 hectares) of black-tailed prairie dog occupied habitat. It appears that the black-tailed prairie dog occupied habitat objective on Tribal lands has already been achieved. Management procedures to maintain and monitor the species are in place or under development.

Other Tribes - Several other Tribes have participated in inter-tribal meetings and work groups and expressed an interest in developing management plans and CCAAs for the black-tailed prairie dog. These Tribes include: Crow (Montana), Fort Belknap (Montana), Northern

Cheyenne (Montana), Fort Berthold (North Dakota), Standing Rock Sioux (North and South Dakota), Pine Ridge/Oglala Sioux (South Dakota), Rosebud Sioux (South Dakota), and Yankton Sioux (South Dakota).

<u>U.S. Air Force</u> - Some black-tailed prairie dogs occur on Air Force installations, but no information regarding regulatory mechanisms has been provided. The Air Force appears to have management authority that could assist the States in meeting their management goals.

<u>U.S. Animal and Plant Health Inspection Service</u> - APHIS does not manage any Federal lands; however, it supports prairie dog control programs through its involvement in the field; grant-in-aid program to States; technical assistance to other State, Tribal, and Federal agencies, and private landowners; and distribution of toxicants. No information regarding regulatory changes has been provided.

<u>U.S. Army</u> - The U.S. Army manages an estimated 8,838 acres (3,579 hectares) of black-tailed prairie dog occupied habitat on its lands (Hoefert, U.S. Army, <u>in litt.</u> 2001). Management policies vary depending on the installation. In general there is no recreational shooting or chemical control of prairie dogs. Prairie dog colonies are also avoided during field exercises. Some installations have ongoing plague research and/or management (Woodson, U.S. Army, pers. comm. 2000). No specific regulatory changes have been proposed or enacted. The Army appears to have management authority that could assist the States in meeting their management goals.

<u>U.S. Bureau of Indian Affairs</u> - The BIA's involvement in prairie dog control efforts has been principally through management of funding for prairie dog control programs on Tribal lands. Large-scale chemical control efforts last occurred in the 1980's in South Dakota. Additional extensive control efforts in the State were later halted due to concerns regarding the endangered black-footed ferret (*Mustela nigripes*). No information regarding regulatory changes has been provided.

U.S. Bureau of Land Management - The BLM manages approximately 46,400 acres (18,800 hectares) of black-tailed prairie dog occupied habitat on their lands and also manages significant amounts of potential habitat. The BLM manages prairie dogs to meet multiple-use resource objectives including production of livestock forage and prevention of prairie dog encroachment onto adjacent lands. In a memorandum dated June 22, 2000, BLM instructed all of its State Directors within the range of the species to "ensure that activities authorized, funded or carried out by BLM do not contribute to the need to list the black-tailed prairie dog." Several required actions on BLM managed lands are specified including: ensuring that no unauthorized control occurs, ensuring that conservation of the species is addressed in all grazing permit renewals and other activities, evaluating the need to restrict sport hunting, mapping all occupied habitat, and developing a monitoring strategy. An estimated 1,416 acres (573 hectares) of occupied habitat on lands managed by BLM in Phillips County, Montana are closed to recreational shooting (Haske, U.S. Bureau of Land

Management, <u>in litt</u>. 2002 and Lawton, U.S. Bureau of Land Management, <u>in litt</u>. 2002). The BLM appears to have management authority that could assist the States in meeting their management goals.

<u>U.S. Environmental Protection Agency</u> - The EPA does not manage any black-tailed prairie dog occupied habitat. It deals indirectly with prairie dog control through pesticide labeling programs, including restrictions to protect wildlife. Presently, labeling does not restrict prairie dog control, but does address concerns for the endangered black-footed ferret. No information regarding regulatory changes has been provided.

<u>U.S. Fish and Wildlife Service</u> - The Service manages over 500 National Wildlife Refuges and their satellites, but only about 15 refuges, satellites, or Waterfowl Production Areas have black-tailed prairie dogs. Three refuges have a significant amount of occupied habitat. On Charles M. Russell and UL Bend National Wildlife Refuges in Montana, 5,150 acres (2,090 hectares) of occupied habitat are managed. to enhance its value as a black-footed ferret reintroduction site (Matchett 1997). The Rocky Mountain Arsenal National Wildlife Refuge in Colorado manages black-tailed prairie dogs to support and enrich a diversity of wildlife and is attempting to recover populations subsequent to repeated plague epizootics (U.S. Fish and Wildlife Service 1998). The Service has placed a moratorium on all recreational shooting and chemical control of the species on lands managed by the Service (Clark, U.S. Fish and Wildlife Service, <u>in litt.</u> 2000). The Service appears to have management authority that could assist the States in meeting their management goals.

<u>U.S. Forest Service</u> - The Forest Service manages approximately 42,460 acres (17,200 hectares) of black-tailed prairie dog occupied habitat on its lands and also manages significant amounts of potential habitat (Sidle, U.S. Forest Service, <u>in litt.</u> 1999). The Forest Service has undertaken several actions in an effort to enhance conservation of the species including: establishing shooting restrictions to assist in black-footed ferret recovery in portions of Buffalo Gap and Thunder Basin National Grasslands where the majority of occupied habitat on Forest Service lands exists, designating the black-tailed prairie dog as a Sensitive Species and a Management Indicator Species; limiting poisoning to situations of human health concern, protection of cemeteries and plague management; amending Grassland Plans to increase occupied habitat; and initiating monitoring (Furnish, U.S. Forest Service, <u>in litt.</u> 2000). The Forest Service appears to have management authority that could assist the States in meeting their management goals.

<u>U.S. National Park Service</u> - Approximately 6,600 acres (2,700 hectares) of black-tailed prairie dog occupied habitat exist on lands managed by the Park Service. Its policy is to conserve and recover the species wherever possible. Control is allowed for purposes of human health and safety, good neighbor relations, and to reduce conflicts with other park

objectives. In the past 12 months, the Park Service has not allowed recreational shooting or chemical control (Given, National Park Service, pers. comm. 2000). The Park Service appears to have management authority that could assist States in meeting their management goals.

<u>Canada</u> - In Canada, only private landowners are permitted to shoot prairie dogs and control is prohibited. The black-tailed prairie dog is designated as vulnerable by the Committee on the Status of Endangered Wildlife in Canada (Fargey, GNP, in <u>litt</u>. 2001).

Mexico - During the past year there was no shooting and little chemical control (List, in litt. 2001). The black-tailed prairie dog is listed as threatened by the Lista de las Especies Amerzadas, the official threatened and endangered species list of the Mexican Government (SEMARNAP 1994).

Conclusions - We have determined that recreational shooting is not a threat to the continued survival of the black-tailed prairie dog as a species. Therefore, regulatory mechanisms relating to recreational shooting are not problematic for the persistence of the species (see Factor B).

We conclude that only in specific circumstances could inadequate regulatory mechanisms related to chemical control be considered problematic for the species. Specifically, we believe that the relatively large, plague-free complexes on Tribal lands in South Dakota are unique and important for species viability. Some of these populations have been significantly impacted and further threatened by chemical control programs in the recent past (Roemer and Forrest 1996) and could be threatened again in the future if adequate regulatory mechanisms are not adopted. Accordingly, we conclude that inadequate regulatory mechanisms, as they relate to chemical control (see Factor E) and consequently to threatened curtailment of occupied habitat (see Factor A) constitute a low threat at present.

Additionally, we conclude that inadequate regulatory mechanisms, as they relate to management activities necessary to address disease issues (Factor C), are a threat to the species where adequate acreage goals for maintaining occupied habitat, monitoring, and other management techniques are limited to a degree that various jurisdictional authorities do not have the ability to intervene to stabilize or otherwise manage black-tailed prairie dog populations affected by disease.

During the past year several States and Tribes have made significant progress in initiating management efforts for the black-tailed prairie dog including completing management plans, enacting laws that change the status of the species from "pest" to a designation that recognizes the need for special management, establishing regulations that allow for better management of recreational shooting, and setting future goals for occupied habitat which will address population management needs for disease and other threats. These are all positive steps towards eliminating the threats exacerbated by and potentially exacerbated by

inadequate regulatory mechanisms. Concerns still remain including the general absence of efforts to better monitor and regulate chemical control, the failure of most States to formally approve management plans, and the lack of acceptance by some States of 10-year occupied habitat objectives developed by the Black-tailed Prairie Dog Conservation Team (Montana, North Dakota, and Oklahoma).

Collectively, these limitations continue to constitute a moderate threat to the species. We conclude that the immediacy of the threat to the species due to the inadequacy of existing regulatory mechanisms is non-imminent. Previously, we determined that this threat was imminent because it was ongoing. We now conclude that this threat is non-imminent because both the threats related to chemical control and the threats related to the development of habitat objectives to address plague management are largely potential threats.

Table 5 summarizes our evaluation of various aspects of Factor D.

Table 5. Potential/Actual Threats, due to Factor D, Influencing the Black-tailed Prairie Dog so as to meet the Definition of "Threatened"

Factor			Magnitude of Threat	Immediacy of Threat	Comments
D.1. inadequate	existing	regulations	no threat	no threat	related to Factor B (recreational shooting)
D.2. inadequate	existing	regulations	low	non-imminent	related to Factor E (chem. control) on large complexes, also impacts Factor A (habitat curtailment)
D.3. inadequate	existing	regulations	moderate	non-imminent	related to Factor C (disease)

E. Other natural or manmade factors affecting its continued existence

We have considered chemical control of black-tailed prairie dogs and synergistic effects from all threats under this factor. Chemical control is also influenced by inadequate regulatory mechanisms and has been discussed in part under Factor D.

Summary and Reevaluation of Previous Information - Black-tailed prairie dog populations can recover to an appreciable degree from chemical control efforts in many situations. However, a better means of monitoring the extent of chemical control is needed in order to fully evaluate this influence on the species. Sales of zinc phosphide, the principal toxicant used to poison prairie dogs, appear to have increased since the filing of the petition to list the black-tailed prairie dog in 1998. At least 18,545 pounds of zinc phosphide bait were sold during fiscal year 1998. At least 42,595 pounds of zinc phosphide bait were sold during fiscal year 1999 (Gober, U.S. Fish and Wildlife Service, in litt. 2000).

The last large-scale chemical control effort occurred on the Pine Ridge Reservation in South Dakota in the 1980's. This effort resulted in the eradication of most prairie dogs on approximately 458,618 acres (185,740 hectares) from 1980-1984. From 1985-1986, 240,000 acres (97,000 hectares) were re-treated (Roemer and Forrest 1996). Following control efforts on Pine Ridge, three additional extensive control efforts targeted for the Cheyenne River Sioux Tribe and Rosebud Sioux Tribe Reservations in South Dakota and Fort Belknap Reservation in Montana were halted due to concerns regarding the lack of available black-footed ferret reintroduction sites. The potential for future large-scale control efforts on Tribal lands is still considered a threat to the status of the black-tailed prairie dog. Black-tailed prairie dog populations at several of these sites are the last remaining large complexes (greater than 10,000 acres / 4,000 hectares) that have not experienced plague. The importance of these populations for the overall viability of the species could be significant.

New Information - Nebraska and South Dakota have some records available of chemical control activities. In Nebraska, in1999, approximately 14,000 acres (6,000 hectares) and in 2000 approximately 12,000 acres (5,000 hectares) were poisoned. There is also a large amount of anecdotal information indicating that a significant level of illegal control activity is being conducted in Nebraska (Fritz, Nebraska Game and Parks Commission, in litt. 2001). In 2001, the South Dakota Department of Agriculture sold approximately 12,600 pounds of zinc phosphide oat bait to APHIS in Nebraska. Additionally, the South Dakota Department of Agriculture sold approximately 29,825 pounds of bait in South Dakota (Spitler, South Dakota Department of Agriculture, pers. comm. 2002). If all of this product were applied within the year of purchase at the recommended application rate of 1/3 pound per acre, a maximum of 37,800 acres (15,300 hectares) could have been chemically controlled in Nebraska and a maximum of 89,500 acres (36,200 hectares) could have been chemically controlled in South Dakota. It is not known whether all of the bait purchased was used or if it was applied at the recommended application rate. This level of chemical control would affect a significant portion of the black-tailed prairie dog population in these States. However, black-tailed prairie dog populations can withstand significant impacts from chemical control in plague-free portions of their range. Ranchers in South Dakota have noted that black-tailed prairie dog populations quickly return to original numbers following chemical control (Fox, in litt. 2002; Jobgen, in litt. 2002; Rasmussen, in litt. 2002).

Other States have little information regarding the extent of chemical control. The degree to which poisons are applied in compliance with label requirements is also unknown. Sidle (U.S. Forest Service, in litt. 2002) noted that approximately 1,500-2,000 acres (600-800 hectares) had been recently poisoned in Custer County, South Dakota.

Conclusions - We conclude that impacts on the species due to chemical control programs are a low-magnitude threat at present, especially where large black-tailed prairie dog complexes such as exist on Tribal lands could be impacted. Additionally, we believe there is a

threatened curtailment of habitat of moderate magnitude due to chemical control on many plague-free black-tailed prairie dog populations in South Dakota and Nebraska. We believe these threats are non-imminent due to the fact that at this time it is a threatened or potential curtailment of habitat.

We believe that synergistic effects likely impact the black-tailed prairie dog. However, we are unable to adequately describe these effects. Additionally, we are unaware of data from similar species in similar ecological circumstances that we can use to infer that these influences would cause the status of the species to meet a threatened definition. Consequently the magnitude and immediacy of this threat are unknown.

Table 6 summarizes our evaluation of various aspects of Factor E.

Table 6. Potential/Actual Threats, due to Factor E, Influencing the Black-tailed Prairie Dog so as to meet the Definition of "Threatened"

Factor		Magnitude of Threat	Immediacy of Threat	Comments
E.1. other	chemical control	Moderate	non-imminent	also related to Factor D (regulations) and Factor A (curtailment of habitat)
E.2. other	synergistic effects	unknown	unknown	potential adverse impacts, but not demonstrable

SUMMARY:

Historically, black-tailed prairie dog populations coped successfully with various depressant factors, except plague, on a different scale; populations were large and robust while threats were few with only temporal effects. Presently, most populations are significantly reduced and must cope with many persistent influences that depress populations, both temporarily and permanently. We believe that depressant factors (especially plague) continue to cause local extirpations that could lead to the species becoming vulnerable in a significant portion of its range (U.S. Fish and Wildlife Service 2000). Although there are an apparent large number of individual black-tailed prairie dogs, even after large historic declines in the amount of occupied habitat, the black-tailed prairie dog is a highly social species that for the most part responds to the major factors causing population reductions (e.g., plague and control) as a colony rather than on an individual basis. The species may have difficulty coping with these challenges without the advantage of its historic abundance and wide distribution. Accordingly, the vulnerability of the species to population reductions may be related less to its absolute numbers across its range than to the number of colonies in which it exists, their size, their geospatial relationship, existing barriers to immigration and emigration, and the number and nature of the threats to the species, both alone and in concert. The appropriate time for successful management intervention to stabilize a colonial species such as the black-tailed prairie dog may be earlier than for some other species.

We have evaluated the magnitude and immediacy of threats to the black-tailed prairie dog as discussed in this candidate assessment. The following is a summary of these evaluations:

• The present or threatened destruction, modification, or curtailment of its habitat or range.

Previously, we concluded that habitat loss and fragmentation were a threat of moderate magnitude, largely due to the fact that 99 percent of the species' historic occupied habitat had been lost. We also noted that a considerable amount of potential unoccupied habitat remained which could be utilized if other factors such as control and disease were not present or were carefully managed via adequate regulatory mechanisms. We considered this threat to be imminent because habitat loss continued.

Now, we alter our previous conclusions and more specifically conclude that habitat destruction, particularly with regard to conversion to cropland, is no longer a threat to the species because the rate of recent conversion is small and most suitable cropland has already been developed. However, ongoing habitat modification through the impacts of sylvatic plague remains a moderate threat. Additionally, threatened habitat curtailment through potential chemical control of large complexes, particularly on Tribal lands, remains a low threat. Moreover, potential chemical control in South Dakota and Nebraska where most black-tailed prairie dog populations have not experienced plague constitutes a low threat to the species.

We consider the threats of habitat modification to be imminent even though sylvatic plague does not affect all black-tailed prairie dog populations simultaneously, and it may not be occurring in the eastern portions of the species' range at present. Additionally, the threat due to habitat curtailment through chemical control on Tribal lands is considered non-imminent because it is not on-going.

• Overutilization for commercial, recreational, scientific, or educational purposes.

Previously, we concluded that overutilization via the pet trade was not a threat and overutilization via recreational shooting was considered a threat of low magnitude. We noted that local populations might be impacted; however, significant rangewide population declines were unlikely. We considered this threat to be imminent because it was ongoing.

Now, we still conclude that overutilization via the pet trade is not a threat. However, we now conclude that there is no available information to demonstrate that significant effects on black-tailed prairie dog populations rangewide occur due to recreational shooting. Accordingly we do not believe that recreational shooting is a threat to the species in the context of the threatened definition in the Act.

Disease or Predation.

Previously, we concluded that predation was not a threat and disease was a threat of moderate magnitude. Sylvatic plague has impacted the species throughout a significant portion of its range and black-tailed prairie dogs experience nearly 100 percent mortality. We considered this threat to be imminent because it was ongoing.

Now, we still conclude that predation is not a threat. We conclude that disease is a threat of moderate magnitude because plague recently has caused significant impacts on black-tailed prairie dog occupied habitat and because it has further modified potential habitat, making it less suitable to support black-tailed prairie dogs. Recent information from several specific sites across much of the range of the species infers the loss of significant amounts of occupied habitat. We consider this threat to be imminent because plague is easily contracted and often results in 100% mortality.

• Inadequacy of existing regulatory mechanisms.

Previously, we concluded that existing regulatory mechanisms were inadequate and constituted a threat of moderate magnitude. All States within the current range of the species classified it as a pest for agricultural purposes and either allowed or required its eradication. Few regulatory mechanisms existed to aid in its conservation. We considered this threat to be imminent because it was ongoing.

Now, we have more fully evaluated the specific individual effects of current regulations and conclude that--(1) inadequate regulatory mechanisms pertaining to recreational shooting are not a threat because recreational shooting cannot be demonstrated to be a threat, (2) inadequate regulatory mechanisms pertaining to chemical control are a moderate magnitude threat which is non-imminent because this potential threat is not ongoing or may not be ongoing, and (3) inadequate regulatory mechanisms pertaining to management activities which address disease issues are a moderate magnitude threat which is non-imminent because plague is an imminent threat for reasons previously noted.

• Other natural or manmade factors affecting its continued existence.

Previously, we concluded that chemical control was a threat of moderate magnitude because historically it resulted in significant population reductions and extirpation of the species in portions of its range, and because currently it may impact 10-20 percent of the species' overall population annually. We also concluded that synergistic effects of various factors were a threat of moderate magnitude due to potentially exacerbating influences such as isolation of scattered populations. We considered both of these threats to be imminent because they were ongoing.

Now, we have more specifically concluded that chemical control is a threat of low-moderate magnitude, especially where large complexes on Tribal lands could be impacted. Chemical control also is a factor in habitat curtailment that is affected by existing regulations. We consider this threat non-imminent because it is largely a potential threat and not ongoing to the extent that it currently causes demonstrable adverse effects. We also conclude that the magnitude and immediacy of synergistic effects have not been quantified and are therefore unknown.

The overall magnitude of threats facing the black-tailed prairie dog remains moderate to low, and the overall immediacy of threats facing the species remains imminent. The species should remain on the Candidate List and listing as threatened remains warranted.

FOR RECYCLED PETITIONS:

- a. Is listing still warranted? <u>yes</u>
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? <u>yes</u>
- c. Is a proposal to list the species as threatened or endangered in preparation? <u>no</u>
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

The black-tailed prairie dog listing determination is currently precluded by the need to complete a final listing determination for the mountain plover, and critical habitat determinations for the northern Great Plains population of the piping plover, Topeka shiner and Prebles' meadow jumping mouse. Additionally, there are eight other candidate species in Region 6 that have higher listing priority numbers.

LAND OWNERSHIP: Nationwide, approximately 70 percent of black-tailed prairie dog occupied habitat occurs on State or private land, 20 percent occurs on Tribal land, and 10 percent occurs on Federal land. Federal land owners include: the U.S. Forest Service, U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, and the U.S. Army.

PRELISTING: The Black-tailed Prairie Dog Conservation Team formed in 1999, with members representing all 11 States within the historic range of the species. A Memorandum of Understanding to implement a Conservation Assessment and Strategy was signed by 9 States in February, 2000. All 11 States and several Tribes have drafted black-tailed prairie dog management plans and most have expressed an interest in umbrella CCAAs with the Service.

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LISTING PRIORITY

THE	REAT		
Magnitude	Immediacy	Taxonomy	Priority
High	Imminent Non-imminent	Monotypic genus Species Subspecies/population Monotypic genus Species Subspecies/population	1 2 3 4 5 6
Moderate to Low	Imminent Non-imminent	Monotypic genus Species Subspecies/population Monotypic genus Species Subspecies/population	7 8* 9 10 11 12

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve:	John A. Blankenship Acting Regional Director, Fish and Wi	<u>April 12, 2002</u> Date		
Concur:	Steve WilliamsDirector, Fish and Wildlife Service	June 3, 2002 Date		
Do not co	ncur: Director, Fish and Wildlife Service	;	Date	
Director's	Remarks:			
	nnual review:			
Comment	ss:			