the direct final notice of deletion, and it will not take effect. We will, as appropriate, address all public comments in a subsequent final deletion notice based on this notice of intent to delete. We will not institute a second comment period on this notice of intent to delete. Any parties interested in commenting must do so at this time. For additional information see the direct final notice of deletion located in the Rules section of this **Federal Register**.

DATES: Comments concerning this Site must be received by March 6, 2008.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–SFUND–1983–0002 Notice 4, by one of the following methods:

http://www.regulations.gov (Follow the on-line instructions for submitting comments)

E-mail: walters.donn@epa.gov.

Fax: 214–665–6660.

Mail: Donn Walters, Community Involvement, U.S. EPA Region 6 (6SF–TS), 1445 Ross Avenue, Dallas, TX 75202–2733, (214) 665–6483 or 1–800–533–3508.

Instructions: Direct your comments to Docket ID No. EPA–HQ–SFUND–1983–0002 Notice 4. EPA policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information, disclosure of which is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected. The *http://www.regulations.gov* Web site is an ''anonymous access'' system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *http://www.regulations.gov,* your e-mail address will automatically be captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption and be free of any defects or viruses.

Docket: All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available, e.g., CBI or other information disclosure of which is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically at *http://www.regulations.gov* or in hard copy at the information repositories.

FOR FURTHER INFORMATION CONTACT: Shawn Ghose M.S., P.E., Remedial Project Manager (RPM), U.S. EPA Region 6 (6SF–RA), 1445 Ross Avenue, Dallas, TX 75202–2733, *ghose.shawn@epa.gov* (214) 665–6782 or 800–533–3508.

SUPPLEMENTARY INFORMATION: For additional information see the Direct Final Notice of Deletion located in the ''Rules'' section of this **Federal Register**.

Information Repositories: Repositories have been established to provide detailed information concerning this decision at the following locations: U.S. EPA Region 6, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202–2733, (214) 665–6617, by appointment only Monday through Friday 9 a.m. to 12 p.m. and 1 p.m. to 4 p.m.; Fort Smith Public Library, 3201 Rogers Avenue, Ft. Smith, AR 72903, (479) 783–0229, Monday through Thursday, 9 a.m. to 9 p.m., 9 a.m. to 6 p.m. Friday, 10 a.m. to 5 p.m. Saturday and 1 p.m. to 5 p.m. Sunday; Arkansas Department of Environmental Quality (ADEQ), 5301 Northshore Drive, North Little Rock, Arkansas 72118, (501) 682–0744, Monday through Friday 8 a.m. to 4:30 p.m.

List of Subjects in 40 CFR Part 300

Environmental protection, Air pollution control, Chemicals, Hazardous waste, Hazardous substances, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

Authority: 33 U.S.C. 1321(c)(2); 42 U.S.C. 9601–9657; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; E.O. 12580, 52 FR 2923; 3 CFR, 1987 Comp., p. 193.

Dated: September 28, 2007.

Richard E. Greene,

Regional Administrator, EPA Region 6.

Editorial Note: This document was received at the Office of the Federal Register on January 30, 2008.

[FR Doc. E8–1963 Filed 2–4–08; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[FWS–R6–ES–2008–0013; 1111 FY07 MO–B2]

Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Gunnison's Prairie Dog as Threatened or Endangered

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of a 12-month petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce our 12-month finding on a petition to list the Gunnison's prairie dog (*Cynomys gunnisoni*) as an endangered or threatened species under the Endangered Species Act of 1973, as amended (Act). After a thorough review of all available scientific and commercial information, we find that the species is not threatened or endangered throughout all of its range, but that the portion of the current range of the species located in central and south-central Colorado and north-central New Mexico (the northeastern portion of the range) represents a significant portion of the range where the Gunnison's prairie dog is warranted for listing under the Act. Currently, listing is precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. We have assigned a listing priority number (LPN) of 2 to this species, because threats have a high magnitude, and are imminent. We will develop a proposed rule to list the Gunnison's prairie dog in the northeastern (montane) portion of its range as our priorities allow.

DATES: This finding was made on February 5, 2008.

ADDRESSES: This finding is available on the Internet at *http://www.regulations.gov* and *http://www.fws.gov/mountain-prairie/species/mammals/gunnisonprairiedog.* Supporting documentation we used to prepare this finding is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Western Colorado Field Office, 764 Horizon Drive, Building B, Grand Junction, CO 81506–3946; telephone (970) 243–2778; facsimile (970) 245–6933. Please submit any new information, materials, comments, or questions concerning this finding to the above address.

FOR FURTHER INFORMATION CONTACT: Al Pfister, Field Supervisor, U.S. Fish and Wildlife Service, Western Colorado Field Office (see **ADDRESSES**). If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(B) of the Act (16 U.S.C. 1531 *et seq.*), requires that, for any petition containing substantial scientific and commercial information that listing may be warranted, we make a finding within 12 months of the date of receipt of the petition on whether the petitioned action is—(a) not warranted, (b) warranted, or (c) warranted, but that immediate proposal of a regulation implementing the petitioned action is precluded by other pending proposals to determine whether species are threatened or endangered, and whether expeditious progress is being made to add or remove qualified species from the Lists of Endangered and Threatened Wildlife and Plants. Section 4(b)(3)(C) of the Act requires that we treat a petition for which the requested action is found to be warranted but precluded as though resubmitted on the date of such finding; that is, requiring a subsequent finding to be made within 12 months. We must publish these 12-month findings in the **Federal Register**.

Previous Federal Actions

On February 23, 2004, we received a petition from Forest Guardians and 73 other organizations and individuals requesting that the Gunnison's prairie dog (found in Arizona, Colorado, New Mexico, and Utah) be listed as threatened or endangered.

On July 29, 2004, we received a 60-day notice of intent to sue for failure to complete a finding. On December 7, 2004, an amended complaint for failure to complete a finding for this and other species was filed. We reached a settlement agreement with the plaintiffs, and on February 7, 2006, we published a 90-day finding in the **Federal Register** (71 FR 6241) determining that the petition did not present substantial scientific information indicating that listing the Gunnison's prairie dog species may be warranted.

On August 17, 2006, Forest Guardians and eight other organizations and individuals provided written notice of their intent to sue regarding the determination in the 90-day finding. On December 13, 2006, the plaintiffs filed a complaint challenging the finding. On June 29, 2007, we reached a settlement agreement with the plaintiffs for submittal to the **Federal Register** of a 12-month finding by February 1, 2008. The court adopted the terms and conditions of the agreement on July 2, 2007.

On August 28, 2007, we published a notice initiating the 12-month finding and opening a 60-day public comment period on the Gunnison's prairie dog (72 FR 49245).

Species Information

A description of the Gunnison's prairie dog is included in the 90-day petition finding (71 FR 6241; February 7, 2006) and in a concise review of the published information by Underwood (2007, pp. 6–13). In addition, we used data in the Western Association of Fish and Wildlife Agencies' (WAFWA) Gunnison's Prairie Dog Conservation Assessment (Seglund *et al.* 2005) to complete much of our analysis in this finding.

The Gunnison's prairie dog has sometimes been divided into two subspecies: *Cynomys gunnisoni gunnisoni* and *C. g. zuniensis* (Hollister 1916, p. 29). We currently regard the Gunnison's prairie dog as a single species because the most recent published analyses (Goodwin 1995, pp. 100, 101, 110; Pizzimenti 1975, pp. 11, 15, 63) do not support subspecies designation. Unpublished research (Hafner 2004, p. 6; Hafner *et al.* 2005, p. 2) indicates that the distribution of mitochondrial DNA (deoxyribonucleic acid) haplotype lineages supports past geographic isolation, followed by limited mixing in regions coincident with the recognized borders of the two purported subspecies. Although this analysis will likely be substantiated through additional research, it is still preliminary and needs to be verified before we can use it as evidence for subspecies designation. For the same reasons, although Gunnison's prairie dogs in montane habitat may be ''markedly separate'' from those in prairie habitat, we are not proposing listing the montane prairie dogs as a distinct population segment (DPS) under our Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act (61 FR 4722; February 7, 1996). We anticipate that future funding may become available for genetic, taxonomic, and range research to determine whether subspecies or DPS status is valid.

Gunnison's prairie dogs are a colonial species, historically occurring in large colonies over large areas. Colonial behavior offers an effective defense mechanism by aiding in the detection of predators, but it also can play an important role in the transmission of disease (Antolin *et al.* 2002, p. 19; Biggins and Kosoy 2001, p. 911). Complexes of Gunnison's prairie dog colonies (metapopulations) expand or contract over time depending upon various natural factors (such as reproduction, food availability, and disease) and human-caused factors (such as chemical control and shooting). To substantially augment depleted populations or replace populations without human intervention, a metapopulation structure is required across the landscape so that migration between colonies is possible (Gilpin and Soule 1986, p. 24; Clark *et al.* 1982, pp. 574–575; Lomolino and Smith 2001, p. 938).

Habitat

Gunnison's prairie dog habitat includes level to gently sloping grasslands and semi-desert and montane shrublands, at elevations from 6,000 to 12,000 feet (1,830 to 3,660 meters) (Bailey 1932, p. 125; Findley *et al.* 1975, p. 133; Fitzgerald *et al.* 1994, p. 183; Pizzimenti and Hoffman 1973, p. 1; Wagner and Drickamer 2002, p. 4). Grasses are the most important food item, with forbs, sedges, and shrubs also occasionally used (Pizzimenti and Hoffman 1973, p. 3; Shalaway and Slobodchikoff 1988, p. 840).

Gunnison's prairie dog range can be considered to occur in two separate range portions—higher elevations in the northeast part of the range and lower elevations elsewhere (Bailey 1932, pp. 125–127; Pizzimenti and Hoffman 1973, pp. 1–2; Hall 1981, p. 7; Knowles 2002, p. 4). We refer to these areas as montane and prairie, respectively, throughout the document to differentiate them; however, we recognize that these terms are an oversimplification of the actual habitats present, and describe them in more detail below.

In Figure 1, we provide a map illustrating the division of the general range of the species into the northeastern (montane) and southwestern (prairie) portions. The outer boundary in Figure 1 is referenced from maps depicting the species' gross range (Hollister 1916, p. 24; Pizzimenti and Hoffman 1973, p. 2; Pizzimenti 1975, p. 4; Hall 1981, p. 415; Knowles 2002, p. 6), and from maps of the species' range in Arizona (Hoffmeister 1986, p. 194), Colorado (Armstrong 1972, p. 139; Fitzgerald *et al.* 1994, p. 185), New Mexico (Findley *et al.* 1975, p. 133), and Utah (Durrant 1952, p. 106). An approximate boundary dividing the montane and prairie range portions was established from several maps that recognize discrete range portions for each of the two purported subspecies,

Cynomys gunnisoni gunnisoni and *C. g. zuniensis* (Hollister 1916, p. 24; Armstrong 1972, p. 139; Pizzimenti and Hoffman 1973, p. 2; Pizzimenti 1975, p. 4; Hall 1981). Maps that depict the geographic variation in Gunnison's prairie dog mitochondrial DNA in southern Colorado and northern New Mexico (Hafner 2004, p. 6; Hafner *et al.* 2005, p. 2) were used to improve the resolution of the montane and prairie boundary in this region, as these maps provide a boundary based on genetic differences between Gunnison's prairie dogs in the two range portions. Lastly, we used topographic maps to adjust the boundary on a finer scale along the mountain ranges and ridges of southern Colorado and northern New Mexico, because geography partly separates the Gunnison's prairie dog populations and allows limited overlap between the two range portions (Knowles 2002, p. 3; Hafner *et al.* 2005, p. 1).

In summary, the maps we used to delineate the montane and prairie range portions vary in their age, projection, scale, and accuracy, and depict boundaries based on geography, morphological traits of Gunnison's prairie dog populations, and genetic characteristics from Hafner's work (Hafner 2004, p. 6; Hafner *et al.* 2005, p. 2). They contribute to the best available information used to establish the montane and prairie portions of the species' range for further analysis.

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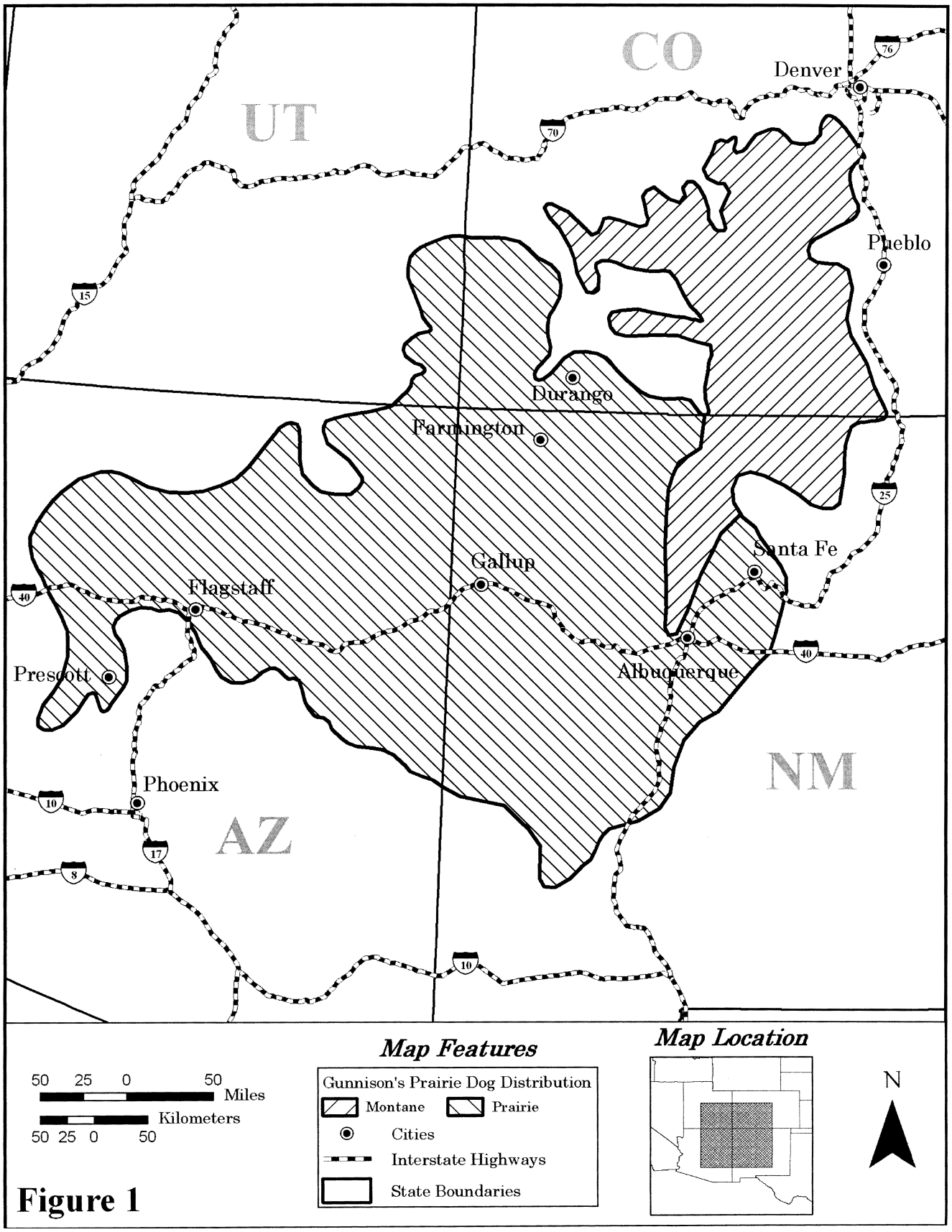

Figure 1

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Montane Habitat

The northeastern range (central and south-central Colorado, and north-central New Mexico) consists primarily of higher elevation, cooler and more mesic plateaus, benches, and intermountain valleys. We call this portion ''montane'' for ease of reference, and it comprises approximately 40 percent of the total potential habitat within the current range. Gunnison's prairie dogs occupy grass-shrub areas in low valleys and mountain meadows within this habitat (Seglund *et al.* 2005, p. 12). The Gunnison's prairie dogs in this portion of the range are limited by pronounced physiographic barriers (Pizzimenti and Hoffman 1973, p. 1), including the Uncompahgre Plateau and San Juan mountains in Colorado and Utah, and the Sangre de Cristo, San Juan, and Jemez mountain ranges in New Mexico.

Prairie Habitat

The southwestern range (southeastern Utah, southwestern Colorado, northwestern New Mexico, and northeastern Arizona) consists primarily of lower elevation, warmer and more xeric plains and plateaus (Bailey 1932, pp. 125–127; Pizzimenti and Hoffman 1973, pp. 1–2; Hall 1981, p. 7; Knowles 2002, p. 4). We call this portion ''prairie'' for ease of reference, and it comprises approximately 60 percent of total potential habitat within the current range. Gunnison's prairie dogs occupy shortgrass and mid-grass prairies within this habitat (Seglund *et al.* 2005, p. 12).

Distribution, Abundance, and Trends

The current distribution of the species includes northeastern Arizona; central, south-central, and southwestern Colorado; north-central and northwestern New Mexico; and extreme southeastern Utah (Bailey 1932, pp. 125–127; Pizzimenti and Hoffman 1973, pp. 1–2; Hall 1981, p. 7; Knowles 2002, p. 4) (see Figure 1 above). Limited overlap occurs in the ranges of Gunnison's prairie dogs and black-tailed prairie dogs (*Cynomys ludovicianus*) in New Mexico (Goodwin 1995, p. 101; Sager 1996, p. 1), and Gunnison's prairie dogs and white-tailed prairie dogs (*Cynomys leucurus*) in Colorado (Knowles 2002, p. 5), but we have no evidence that interbreeding is occurring. Currently, 27 percent of potential Gunnison's prairie dog habitat occurs in Arizona, 25 percent in Colorado, 45 percent in New Mexico, and 3 percent in Utah (Seglund *et al.* 2005, p. 83). We used the data in Seglund *et al.* (2005, pp. 82, 85–87) to calculate that approximately 22 percent of the potential habitat occurs on private lands, 12 percent on State lands, 17 percent on Federal lands, and 49 percent on Tribal lands/Bureau of Indian Affairs (BIA). The Tribal lands habitat occurs mostly in Arizona and New Mexico; a large amount of potential habitat is on Navajo lands (Cole, p. 1).

Most estimates of prairie dog populations in the available literature are expressed in terms of area (acres (ac) or hectares (ha)) of occupied habitat rather than in numbers of individuals, most likely because counting individuals is feasible only for small areas (Biggins *et al.* 2006, p. 94). Also, the number of animals present in a locality has been observed to vary with habitat, season, colony age, precipitation, forage, predation, disease, chemical control, shooting, and other factors (Knowles 2002, pp. 7–8); density of individuals typically ranges from 2 to 23 per ac (5 to 57 per ha) (Fitzgerald *et al.* 1994, p. 184). Most prairie dog surveys do not result in a density estimate because of the associated effort and cost. Estimates of Gunnison's prairie dog occupied habitat provide one of the best available and most reasonable means of evaluating the status of the species across its range.

Obtaining estimates of occupied area is itself time-consuming and costly. Ground or aerial mapping of colonies over a predicted habitat range of 23 million ac (9.5 million ha) in 4 States would be required to determine a rangewide estimate of the area occupied by the Gunnison's prairie dog (Seglund *et al.* 2005, pp. 17–19). Recent attempts at less expensive aerial surveys (for example, air photo interpretation) have been limited in their effectiveness when applied to Gunnison's prairie dogs (Johnson *et al.* 2006, p. 3; Seglund *et al.* 2005, pp. 23–24). Whether surveying is performed from the air or on the ground, it is often difficult to accurately and consistently discern colony boundaries (thus introducing error in the area measurements). Older studies did not benefit from technologies such as global positioning systems and geographic information systems (GIS) in mapping colonies. Accuracy suffers when studies are performed over the longer time intervals necessary to visit large range portions, because colony area, location, and persistence on the landscape often change relatively quickly (Wagner *et al.* 2006, p. 335).

In summary, we recognize that different methodologies were used at different times and in different locales to derive the various historical occupied area estimates we obtained for review. These estimates contribute to the best available information, and we consider them comparable for determining long-term population trends, while acknowledging potential error margins on the scale of an order of magnitude.

Since our 90-day finding in 2006, all States within the range of the species have applied occupancy modeling methodology to investigate the habitat occupied by Gunnison's prairie dogs. This is a newer technique that yields estimates of the percentage of random plots occupied across the habitat range under consideration (MacKenzie *et al.* 2002, pp. 2248–2249; MacKenzie *et al.* 2003, pp. 2200–2201). These estimates are statistically based and, therefore, are considered more objective (Andelt *et al.* 2006, pp. 1–2; Colorado Division of Wildlife (CDOW) 2007, p. 19; WAFWA 2007, p. 4).

A drawback is that estimates of percent occupancy by Gunnison's prairie dogs are not directly comparable to estimates of occupied acres (including most historic estimates), because when a random plot is visited, only detection or non-detection (not acres occupied) is recorded by the observers. If mapping is not performed during a site visit, no information about colony or complex size or location is obtained.

The positive aspects of this method are statistical rigor, precision estimates, large-scale application in a single season, and trend analysis if performed over subsequent years. In addition, the results of individual surveys can be interpreted separately to assess prairie dog occupancy and document trends within in specific areas of concern. Although only a single year (2007) of occupancy modeling results are available (with the exception of Colorado data from 2005 and 2007), we used these estimates, along with estimates of occupied areas, to assess the status and trends of the Gunnison's prairie dog in each of the four States.

Historical Estimates of Abundance

Historical estimates of Gunnison's prairie dog occupied habitat in Arizona and New Mexico are available from Federal records of early poisoning efforts, such as by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS). In 1916, approximately 6.6 million ac (2.7 million ha) of Gunnison's prairie dog occupied habitat occurred in Arizona, and 11 million ac (4.4 million ha) occurred in New Mexico (Oakes 2000, pp. 169–171). In our 90-day finding in 2006 (71 FR 6241, February 7, 2006), we calculated historical estimates (circa 1916) for Colorado (6 million ac (2.4 million ha)) and Utah (700,000 ac (284,000 ha)) from prairie dog information in various

publications and reports, because data were not available for these States. By summation, based on the best available information, our rangewide estimate for historic (circa 1916) Gunnison's prairie dog occupied habitat was approximately 24 million ac (9.7 million ha).

In 1961, an estimated 445,000 ac (180,000 ha) of habitat was occupied by Gunnison's prairie dog in Arizona; 116,000 ac (47,000 ha) in Colorado; 355,000 ac (144,000 ha) in New Mexico; and 100,000 ac (41,000 ha) in Utah (Bureau of Sport Fisheries and Wildlife 1961, pp. 1, 5). By summation, the rangewide estimate for Gunnison's prairie dog occupied habitat in 1961 was approximately 1 million ac (405,000 ha). These data suggest that, from 1916 to 1961, Gunnison's prairie dog populations decreased by approximately 93 percent in Arizona, 98 percent in Colorado, 97 percent in New Mexico, and 86 percent in Utah, or by approximately 95 percent rangewide. However, historic declines may not support a conclusive inference that current populations continue to decline.

In summary, empirical data on acres occupied indicate that, between 1916 and 1961, habitat occupied by the Gunnison's prairie dog throughout its range declined from approximately 24,000,000 ac (9,700,000 ha) to approximately 1,016,000 ac (406,400 ha).

Statewide Estimates of Abundance

As indicated above, estimates of percent occupancy arrived at through recent occupancy modeling (presence or absence at a random plot) do not equate to acres occupied. The method currently used by States to assess the Gunnison's prairie dog's status, in conjunction with both historic and recent mapping efforts, provides empirical data on percent occupancy of potential habitat. This data is useful as a gross-scale comparison to historical estimates of acres occupied. Both types of data are valid and represent the best available science.

Full occupancy of surveyed habitat would not directly equate to 100 percent of available habitat, but it would provide a gross approximation of occupancy at a larger geographic scale. For the purposes of interpreting the percent occupancy numbers in this document, current State survey efforts utilize a scale from 1 to 100, indicating the percentage of occupied cells surveyed. Because we do not have historical data on percent of habitat occupied or on occupancy rates, we use the current percentage of occupied habitat to compare between habitats that currently appear to have a functional metapopulation structure (prairie) and that do not (montane). For example, the following paragraphs illustrate that Gunnison's prairie dog occupancy in plots sampled in montane habitat is estimated to be approximately 3.6 percent as compared to approximately 18.3 percent in plots sampled in prairie habitat in Colorado. Of the total montane habitat, approximately 85 percent occurs in Colorado.

Arizona

In 2007, occupied habitat on non-Tribal lands in Arizona comprised approximately 108,570 ac (40,500 ha) (Underwood 2007, p. 30). No comprehensive data are available from Tribal lands in Arizona, which include 50 percent of the Statewide potential habitat. Therefore, the 2007 estimate for Arizona (Underwood 2007, p. 30) is likely substantially less than what actually exists. Due to a lack of any Tribal estimates since 1961, recent population trends on Tribal lands statewide are unknown, but may have increased over the 1961 estimate of 435,419 ac (176,207 ha). We are unaware of any disproportionate adverse effects to the species on Tribal lands during this interval, and we assume that habitat trends may have followed a similar pattern as on non-Tribal lands. All habitat within Arizona is considered prairie.

Colorado

The Colorado Department of Agriculture (CDA 1990, p. A–3) solicited questionnaire responses from farmers and ranchers from which they extrapolated a 1990 estimate of 1,553,000 ac (621,200 ha) of occupied habitat for all 3 species of prairie dogs found in Colorado (Gunnison's, white-tailed, and black-tailed). Based on species occurrence by county, Seglund et al. (2005, p. 26) estimated that 438,876 ac (177,607 ha) were occupied by Gunnison's prairie dogs.

From 2002 to 2005, the Colorado Division of Wildlife (CDOW) interviewed field personnel from CDOW, the Service, the USFS, and the BLM regarding the habitat occupied by Gunnison's prairie dogs in the State. Colonies were mapped on 1:50,000 scale U.S. Geological Survey county sheets and were designated as ''active'' (known to have prairie dogs inhabiting the colony within the last 3 years); ''inactive'' (prairie dogs occurred in the area but have not been present in more than 3 years); or ''unknown'' (prairie dogs were known to occur historically, but current status was unknown). From this effort, CDOW estimated 182,237 ac (72,895 ha) of active colonies; 9,042 ac (3,617 ha) of inactive colonies; and 171,970 ac (68,788 ha) of colonies in unknown status within Colorado (CDOW 2007, p. 3). These data suggest an increase over the historical 1961 estimate of 115,650 ac (46,802 ha) of occupied habitat in Colorado. We have no way of estimating what percent of this difference may be due to different mapping techniques. We believe that the difference is mostly due to an actual increase in prairie dogs, likely within the prairie portion of the range, because data from the montane portion of the range indicate significantly reduced occupancy rates (see additional analysis below). We used area estimates from 2002 to 2005 to compute a Statewide occupancy estimate of 2.1 percent (known active colony area divided by area of potential habitat) (CDOW 2007). However, the occupancy modeling studies performed in 2005 and 2007 in Colorado, including both prairie and montane portions of the range, yielded Statewide occupancy estimates of 7.5 and 8.6 percent, respectively (Andelt *et al.* 2006, p. 15; CDOW 2007, p. 19), and these estimates are considered more reliable.

Montane and Prairie Habitat in Colorado

Within Colorado, CDOW has designated individual population areas to identify where Gunnison's prairie dogs exist and where management activities should be focused. The montane portion of the species' range in Colorado is composed of the Gunnison, San Luis Valley, South Park, and Southeast population areas. By using CDOW (2007, p. 28) estimates of potential habitat, we determined that the montane range portion in Colorado comprises about 80 percent (6.9 million of 8.5 million ac (2.8 million of 3.4 million ha)) of the available Gunnison's prairie dog habitat in the State. However, the montane range portion only contains about 40 percent (73,861 of 182,237 ac (29,544 of 72,894 ha)) of the available Gunnison's prairie dog habitat occupied in the State, based on our calculations using CDOW mapped area data (CDOW 2007, p. 3).

The La Plata—Archuleta and Southwest population areas, in the prairie portion of Colorado's Gunnison's prairie dog habitat, comprise about 20 percent of the Gunnison's prairie dog habitat and contain about 60 percent of habitat occupied in the State (CDOW 2007, pp. 3, 19). The higher proportion of occupied habitat in the smaller prairie portion of the State indicates that Gunnison's prairie dogs are more abundant in the prairie habitat area.

The 2005 occupancy modeling studies also indicate a higher proportion of occupancy (16 percent) in the prairie portion of the range in Colorado, and a lower proportion of occupancy (3.2 percent) in the montane portion of the species' range in Colorado (Andelt *et al.* 2006, p. 17; CDOW 2007, p. 19). When the study was repeated over the same plots in 2007, occupancy was again found to be higher (18.3 percent) in the prairie portion and lower (3.6 percent) in the montane range portion in Colorado (CDOW 2007, p. 19).

New Mexico

We have no current information on occupied habitat in New Mexico. The best available science is from Bodenchuck (1981 p. 1), who solicited questionnaire responses from agricultural producers in 1981. Respondents reported 107,574 ac (43,567 ha) of Gunnison's prairie dog occupied habitat. Bodenchuck (1981, p. 8) extrapolated a Statewide total of 348,000 ac (141,000 ha) of occupied habitat for the species. Oakes (2000, p. 216) questioned this extrapolation because of possibly faulty assumptions used to derive it. Knowles (2002, p. 22) estimated that 75,000 ac (30,000 ha) of occupied habitat existed in 1982. New Mexico Department of Game and Fish used Digital Orthophoto Quarter Quadrangles to estimate a minimum of 9,108 ac (3,689 ha) of occupied habitat Statewide in 2004 (Seglund *et al.* 2005, p. 23). However, this method appears to be hampered by inaccurate detection of disturbances, time elapsed since photography, time elapsed since ground mapping, temporal changes in prairie dog towns, and other factors (Seglund *et al.* 2005, p. 33). While these estimates have limited accuracy, general use in assessing Statewide occupied habitat indicates that Gunnison's prairie dogs appeared to be decreasing between 1961 and 2004.

Montane and Prairie Habitat in New Mexico

New Mexico also includes both montane and prairie habitat. The montane habitat is geographically connected to the montane portion of the Gunnison's prairie dog habitat in Colorado. It comprises about 17 percent of the Gunnison's prairie dog habitat in New Mexico; we do not have accurate data on total acres in New Mexico, and therefore do not provide an acre estimate for the montane portion. We have no data on the percent occupancy in this habitat.

The prairie habitat in New Mexico comprises about 83 percent of the habitat; we do not have accurate data on total acres in New Mexico, and therefore do not provide an acre estimate for the prairie portion. We have no data on the percent occupancy in this habitat.

Utah

The Utah Division of Wildlife Resources estimated that 22,000 ac (8,906 ha) of occupied Gunnison's prairie dog habitat existed in Utah in 1968 (Seglund *et al.* 2005, p. 35). Knowles (2002, p. 21) estimated a minimum of 3,678 ac (1,490 ha) of occupied habitat Statewide. The Statewide trend in occupied habitat appears to have decreased from 100,000 ac (40,500 ha) in 1961 (Bureau of Sport Fisheries and Wildlife 1961, p. 5), to 40,000 ac (16,000 ha) in 2007 (Lupis *et al.* 2007, p. 3). The Gunnison's prairie dog occupancy in Utah was estimated to be 15.7 percent in 2007 (Lupis *et al.* 2007, p. 3). We consider all Gunnison's prairie dog habitat in Utah as prairie.

Summary of Statewide Estimates of Abundance

We have empirical data on Gunnison's prairie dog occupancy that indicate a large decline in rangewide occupied acres. We also have recent empirical data that indicates percent occupancy within two separate portions of the range is significantly different.

Data on acres occupied indicate that between 1916 and the present, habitat occupied by Gunnison's prairie dogs throughout its range declined from approximately 24,000,000 ac (9,700,000 ha) to between 340,000 and 500,000 ac (136,000—200,000 ha). This represents a rangewide decline of greater than 95 percent.

Summary of Factors Affecting the Species Rangewide

Section 4 of the Act (16 U.S.C. 1533) and implementing regulations at 50 CFR 424, set forth procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. In making this finding, we summarize below information regarding the status and threats to the Gunnison's prairie dog in relation to the five factors provided in section 4(a)(1) of the Act.

In making this 12-month finding, we have considered all scientific and commercial information received or acquired between the time of the initial petition (February 23, 2004) and the end of the most recent public comment period (October 29, 2007), and additional scientific information from ongoing species surveys and studies as they became available.

Under section (4) of the Act, we may determine a species to be endangered or threatened on the basis of any of the following five factors: (A) Present or threatened destruction, modification, or curtailment of habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We evaluated whether threats to the Gunnison's prairie dog may affect its survival. Our evaluation of threats, based on information provided in the petition, available in our files, and available in published and unpublished studies and reports, is presented below.

A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Agricultural land conversions historically had a significant impact on Gunnison's prairie dog habitat (Knowles 2002, p. 12). Gunnison's prairie dogs have been displaced from some of the more productive valley bottomlands in Colorado and New Mexico (Longhurst 1944, p. 36). Agriculture currently impacts 2,063,930 ac (834,243 ha), or less than three percent, of the Gunnison's prairie dog range (Seglund *et al.* 2005, p. 43). Seglund *et al.* (2005, p. 41) indicate agriculture is not a major rangewide threat because of the small percentage of the range affected, but also because agriculture provides highly productive forage in place of the native arid landscape. Current adverse impacts relate to secondary actions at a local scale, such as prairie dog control (for example, poisoning, shooting) in areas where prairie dogs occupy lands used for agriculture, particularly private lands. We assess shooting under Factor C, poisoning under Factor E, and both in Factor D.

Urbanization also has caused habitat loss for Gunnison's prairie dog. Seglund *et al.* (2005, p. 41) determined that urbanization affects 577,438 ac (233,681 ha) within the range of the species (less than two percent of the range). However, it appears this analysis considered only the direct effects of habitat loss. Urbanization also exerts indirect effects (for example, poisoning and shooting of prairie dogs), extending a human ''disturbance zone'' outward from the actual development footprint.

Lower-density suburban development occurring in the southern Rocky Mountains is scattered and results in a fragmenting of habitats. In Colorado, urban development on the west slope of the Rocky Mountains (montane habitat) is occurring rapidly; 38 percent of Gunnison's prairie dog range is predicted to be impacted by low urban development (less than 40 units per ac;

99 per ha), 6 percent by moderate development (40 to 80 units per ac; 99 to 198 per ha), and 5 percent by high development (fewer than 80 units per ac) between 2000 and 2020 (CDOW 2007, p. 28). We do not have information on the extent of development projected to occur in the other States within the species' range (Utah, Arizona, and New Mexico). Potential threats to Gunnison's prairie dog populations due to urban and suburban development exist, but have not been quantified, in the four cities of Santa Fe and Albuquerque, New Mexico; Flagstaff, Arizona; and Gunnison, Colorado (CDOW 2007, p. 4). In some areas, Gunnison's prairie dogs threatened by urban development have been captured and relocated to preserves or other nearby habitats, mitigating effects to overall population numbers, but not to area of habitat.

Although urban and suburban development exert adverse impacts on Gunnison's prairie dog populations at a local scale, they likely affect less than three percent of the species' range; low density development appears to be compatible with continued use by prairie dogs, due to the offsets provided by lawns and pastures that provide high quality forage (Seglund *et al.* 2005, p. 41).

Noxious weeds can increase in the presence of livestock overgrazing, and a relationship likely exists between overgrazing, *Bromus tectorum* (cheat grass) proliferation, and increased fire frequency and intensity (Seglund *et al.* 2005, p. 43). However, we have no data that quantifies these factors or their correlation with effects to Gunnison's prairie dog populations. The impact of overgrazing on prairie dog populations is contradictory. Some reports have noted that species density is positively correlated with the number of native plants (Slobodichikoff *et al.* 1988, p. 406), and that grazing has decreased forage availability (Seglund *et al.* 2005, p. 42). Other reports have concluded that prairie dog density is positively correlated with an increase in grazing, which simulates the shortgrass-type of prairie environment preferred by prairie dogs (Fagerstone and Ramey 1996, p. 88; Marsh 1984, p. 203, Slobodchikoff *et al.* 1988, p. 406). Considering the conflicting conclusions of published literature, and the lack of large-scale population decreases due to habitat alterations from livestock grazing, we find this is not a significant threat to the Gunnison's prairie dog.

Numerous land parcels within the Gunnison's prairie dog range are leased for oil and gas development (Seglund *et al.* 2005, pp. 36, 42). However, no information is available that quantifies the amount of occupied habitat affected. In a study of white-tailed prairie dogs, Menkens and Anderson (1985, p. 13) concluded that any impact from seismic testing is negligible. However, we acknowledge that oil and gas development is rapidly occurring (Seglund *et al.* 2005, p. 44), and that this potential threat should be considered more closely when more accurate data are available.

Road-related Gunnison's prairie dog mortality exists in proximity to specific population areas. Roads may be increasing due to oil and gas development. However, no studies quantify road mortality of Gunnison's prairie dogs. We have no data indicating that roads are currently threatening the species rangewide, and we conclude that prairie dog populations are able to recover from individual losses due to road mortality.

Conservation principles indicate that smaller, more isolated populations are more vulnerable to extirpation (Barnes 1993, p. 34; Cully 1993, p. 43; Fitzgerald 1970, p. 78; Gilpin and Soule 1986, pp. 30–31; Miller *et al.* 1994, p. 151; Mulhern and Knowles 1995, p. 21; Wilcox and Murphy 1985, p. 883; Wuerthner 1997, p. 464). Lomolino *et al.* (2003, p. 116) found that persistence of Gunnison's prairie dog colonies increased significantly with larger colony size and decreased isolation. However, we found no studies or data that specifically assess the magnitude of the threats discussed under Factor A (agriculture land conversions, urbanization, grazing, roads, and oil and gas leasing) and resulting fragmentation throughout the range of Gunnison's prairie dog habitat.

Summary of Factor A

After assessing the best available science on the magnitude and extent of the effects of agricultural land conversion, urbanization, grazing, roads, oil and gas development, and fragmentation of habitat, we find that the destruction, modification, and curtailment of Gunnison's prairie dog's habitat or range are not significant threats. Agriculture, urbanization, roads, and oil and gas development each currently affect a small percentage of Gunnison's prairie dog habitat. Effects of livestock grazing, while widespread, have not resulted in measurable population declines. However, we need more information on the impacts of fragmentation and isolation with regard to persistence of prairie dog populations and on the magnitude of the potential threat posed by increasing oil and gas development.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Gunnison's prairie dogs have been historically subjected to recreational shooting and shooting as a form of pest management on ranch and agricultural land; these practices continue under current State regulations (see Factor D. Inadequacy of Existing Regulatory Mechanisms). Prairie dogs are especially vulnerable to shooting due to their colonial behavior, which facilitates easy access to many individuals at once (Seglund *et al.* 2005, p. 48). Most field studies on the effects of shooting prairie dogs have been carried out on black-tailed prairie dogs, but we consider the results relevant to Gunnison's prairie dogs (CDOW 2007, p. 41). Shooting effects include population reduction and alteration of behavior, such as decreased foraging rates and increased vigilance, which reduce individual prairie dog vigor and result in lower reproductive output (Knowles 1988, p. 54; Reeve and Vosburgh in press, p. 5; Vosburgh 1996, pp. 32–33; Vosburgh and Irby 1998, p. 368; Pauli and Buskirk 2007, pp. 1223–1224).

Recreational shooting can reduce prairie dog population density at specific sites (Knowles 2002, p. 14; Miller *et al.* 1993, p. 91; Vosburgh 1996, pp. 13–14; Vosburgh and Irby 1998, pp. 366–367). Local extirpation of colonies may have occurred in isolated circumstances in the past (Knowles 1988, p. 54). However, increased population growth rates or recovery from very low numbers following shooting also have been reported (Knowles 1988, p. 54; Reeve and Vosburgh in press, p. 7). Recent studies of the effects of shooting on black-tailed prairie dogs appear to contradict the idea that populations quickly rebound from shooting. Reproductive output on colonies subjected to shooting decreased by 82 percent, while control colonies maintained a stable reproductive rate over the same period (Pauli and Buskirk 2007, p. 1228). Therefore, black-tailed prairie dogs do not appear to rebound quickly from shooting.

The International Union for the Conservation of Nature/Species Survival Commission (IUCN/SSC) Conservation Breeding Specialist Group evaluated the effects of shooting mortality on population viability of Gunnison's prairie dogs (CDOW 2007, p. 124). Simulations were run with a shooting closure in place from March 1 through June 14 each year (approximating State closures) and without any closures. Having the closure in place resulted in positive population growth and

negligible risk of extinction, except in scenarios with the highest levels (20 percent) of shooting-based mortality. Simulations run without the seasonal shooting closure in place suggest that when initial population sizes are smaller (less than 250 individuals) and shooting mortality is high (20 percent), a decrease in growth rate and an increase in population extinction risk exist (CDOW 2007, pp. 135–137). Colorado, Utah, and Arizona (outside Tribal lands) have implemented seasonal closures on prairie dog shooting. In Arizona and New Mexico, the Navajo Nation monitors this threat but currently implements no closures on shooting because it finds the level of shooting to be low on its lands (Cole 2007, p. 4).

Summary of Factor B

We have determined that shooting continues to be a threat to the Gunnison's prairie dog throughout all of its range and contributes to the decline of the species when combined with the effects of disease (see Factor C below). However, this threat is being monitored and managed in all States and the Navajo Nation, and modeling results suggest seasonal shooting closures implemented in Colorado and Arizona will likely reduce population-level losses. Therefore, we have determined that overutilization for commercial, recreational, scientific, or educational purposes is not a significant threat to the Gunnison's prairie dog.

C. Disease or Predation

While prairie dogs are prey to numerous species, including coyotes, badgers, black-footed ferrets, and various raptor species, there is no information available to indicate that predation has an overall adverse effect on the species. Black-footed ferrets have been reintroduced into two locations in Arizona, including the Aubrey Valley, where Gunnison's prairie dog populations appear to be stable.

The Gunnison's prairie dog is, however, affected by sylvatic plague, which occurs in regular outbreaks and causes population declines and extirpations. Plague is an exotic disease foreign to the evolutionary history of North American species (Barnes 1982, p. 238; Barnes 1993, p. 29; Biggins and Kosoy 2001, p. 907). This flea-borne disease, caused by infection with the bacterium *Yersinia pestis,* is shared by humans and other vertebrate animals. Rodents are the primary vertebrate hosts of *Y. pestis,* but other mammals can be infected. *Y. pestis* is transmitted to mammals by bites of infected fleas, direct contact with infected animals, and rarely by inhalation of infectious respiratory droplets from another animal (Gage *et al.* 1995, pp. 695–696). Plague was first observed in wild rodents (termed sylvatic plague) in North America near San Francisco, California, in 1908 and was detected in Gunnison's prairie dogs in the 1930s (Eskey and Hass 1940, p. 6). Plague has subsequently spread so that it now encompasses the entire range of the species (Centers for Disease Control 1998, p. 1; Cully 1989, p. 49; Girard *et al.* 2004, p. 8408). Therefore, it has only been present within the species' range for approximately 70 years, allowing very little time for any resistance to evolve (Biggins and Kosoy 2001, p. 913). Once established in an area, plague becomes persistent and periodically erupts, with the potential to eventually extirpate or nearly extirpate entire colonies (Barnes 1982, p. 255; Barnes 1993, p. 28; Cully 1989, p. 51; Cully *et al.* 1997, p. 711; Fitzgerald 1993, pp. 52–53). The term ''enzootic'' describes plague existing at a less severe level, sometimes referred to as a ''maintenance'' condition, that is present continuously throughout a species' habitat; the term ''epizootic'' describes a severe plague outbreak or amplification transmission cycle (Gage *et al.* 1995, p. 696).

Prairie dogs are highly susceptible to plague, and this susceptibility is thought to be a function of high population densities, abundant flea vectors, and uniformly low resistance (Biggins and Kosoy 2001, p. 913). Gunnison's prairie dogs can experience mortality rates of greater than 99 percent during epizootics, and eradication of populations can occur within one active season (Lechleitner *et al.* 1962, pp. 190–192; Lechleitner *et al.* 1968, p. 736; Rayor 1985, p. 194; Cully 1989, p. 49).

Oral vaccination through consumption of vaccine-laden baits could reduce mortality from plague. Mencher *et al.* (2004, pp. 5504–5505) report protection against plague in black-tailed prairie dogs, elicited through voluntary consumption of a vaccine-laden bait in the laboratory. The vaccine has been shown to be safe in numerous animals including black-footed ferrets, raccoons, skunks, bobcats, cats, dogs, and sheep. However, future field trials are required to test the efficacy on the Gunnison's prairie dog.

Recovery rates of Gunnison's and Utah prairie dog colonies studied 2 years post-epizootic found that Gunnison's prairie dog colonies experienced 100 percent mortality and remained depopulated throughout the study due to the lack of available immigrants (Turner 2001, p. 14). Partial or complete recovery following population reductions due to plague have been reported for both white-tailed and black-tailed prairie dogs (Cully 1993, pp. 40–41), but little to no recovery has been noted in montane Gunnison's prairie dog colony die-offs, even after long periods of time (Capodice and Harrell 2003, pp. 5–7; Cully *et al.* 1997, p. 717; Lechleitner *et al.* 1968, p. 734). Possible long-term consequences of continued plague infection in Gunnison's prairie dog populations may be:

(1) local extirpation of colonies;

(2) reduced colony size;

(3) increased variance in local population sizes, and

(4) increased inter-colony distances (CDOW 2007, p. 43).

The factors that influence interspecific (between species) transmission of plague from mammalian or avian reservoirs (for example, coyotes, raptors, corvids) into prairie dog populations are unclear, but seem to be primarily through fleas that could increase in moister climates (Parmenter *et al.* 1999, p. 818; Rayor 1985, p. 195). However, interspecific transmission does not seem to be a significant factor creating plague epizootics. Plague is now considered enzootic throughout the range of the Gunnison's prairie dog.

The primary factor influencing plague enzootics in Gunnison's prairie dogs is thought to be abundance of fleas within their own colonies. This appears to be correlated with seasonal moisture in specific habitat areas. Plague outbreaks may be triggered by climatic conditions, such as mild winters and moist springs (Parmenter *et al.* 1999, p. 818; Rayor 1985, p. 195). Enscore *et al.* (2002, p. 191) found a close relationship between human plague cases in the southwestern United States and high amounts of late spring (February to March) precipitation (time-lagged 1 and 2 years) and maximum daily summer temperature values in the moderately high range (85 to 90 °F; 29 to 32 °C).

Girard *et al.* (2004, p. 8408) postulated that when resistant hosts of plague encounter a susceptible species that is plague naïve and has a high population density, an epizootic occurs. During epizootic phases, declines in abundance of susceptible species like prairie dogs are observed (Hanson *et al.* 2007, p. 790). The rapid dispersal of the pathogen through an area can be followed by an enzootic phase, a slower transmission cycle that disperses through the lower-density, more resistant hosts remaining from the first cycle. This establishes the disease in stable reservoirs for future emergence

(Girard *et al.* 2004, p. 8413; Gage and Kosoy 2005, pp. 506–509).

Enzootic infection is generally considered characteristic of a stable rodent–flea infectious cycle where host rodents are relatively resistant to the disease. However, Hanson *et al.* (2007, p. 792) found that an unexpectedly high percentage of black-tailed prairie dog colonies in Montana tested positive for plague. They speculate that, under some conditions, black-tailed prairie dogs, rather than acting as resistant hosts, may serve as enzootic hosts or carriers of the pathogen. Plague antibody titers (concentrations in blood) have been found in small numbers of Gunnison's prairie dogs in New Mexico, indicating individual exposure to plague and subsequent recovery (Cully *et al.* 1997, p. 717; Cully and Williams 2001, p. 898). Plague appears to have had little effect on a Gunnison's prairie dog population in Aubrey Valley, Arizona (Wagner and Van Andelt 2007, p. 2). However, little evidence of resistance to plague has been found in any species of prairie dog at this time.

In conducting a Population Viability Analysis on Gunnison's prairie dogs, the IUCN/SSC Conservation Breeding Specialist Group (CDOW 2007, p. 123) hypothesized that in an enzootic scenario, plague operates at a relatively low level each year, thereby increasing average annual rates of mortality above what would occur in a more benign non-enzootic scenario.

Gunnison's prairie dog populations are more susceptible to decline from plague than white-tailed prairie dog populations and are at least as, if not more, susceptible than black-tailed prairie dog populations (Antolin *et al.* 2002, p. 14; Cully 1989, p. 51; Cully and Williams 2001, p. 899; Hubbard and Schmitt 1983, p. 51; Knowles 2002, p. 13; Ruffner 1980, p. 20; Torres 1973, p. 31; Turner 2001, p. iii). Gunnison's prairie dogs commonly forage outside of their home territory, a characteristic that may play a significant role in the susceptibility of the species to plague. The Gunnison's prairie dog may be more susceptible to plague than the black-tailed prairie dog because of the Gunnison's less exclusive territorial behavior (many mix relatively freely throughout adjacent territories) and thereby contribute to the communicability of plague (Hoogland 1999, p. 8).

The Gunnison's prairie dog is also likely more susceptible to plague than the white-tailed prairie dog because the Gunnison's typically occurs at higher densities and is less widely dispersed on the landscape, allowing for more frequent transmission of the disease from one individual to another (Antolin *et al.* 2002, p. 19; Cully 1989, p. 49; Cully and Williams 2001, p. 901; Turner 2001, p. 31). Biggins (2003, p. 6) speculated that if transmission rates for plague are at least partly dependent on host density, prairie dog populations on good quality sites may undergo both larger declines and more rapid recoveries than those on poor sites.

Available literature is inconclusive regarding whether isolation or density of a colony affects the number and frequency of plague outbreaks. Lomolino *et al.* (2003, p. 118) and others (Cully and Williams 2001, p. 901; Miller *et al.* 1993, pp. 89–90) suggested that isolation and fragmentation may provide some protection to prairie dogs from plague by lessening the likelihood of disease transmission. However, this theory no longer applies when plague is enzootic throughout the range of Gunnison's prairie dog (as it appears to be), in which case isolation of colonies reduces the chance of recolonization after extirpation (Wagner and Drickamer 2002, p. 16; Lomolino and Smith 2001, pp. 942–943). In areas where Gunnison's prairie dog colonies are located close to each other (less than 6 miles (mi) (10 kilometers (km) apart), inter-colony dispersal of plague is likely through infected prairie dogs (Girard *et al.* 2004, p. 8412). For colonies separated by long distances or unsuitable habitats, infection may occur due to long-distance dispersal of plague-infected fleas by domestic dogs, coyotes, raptors, or other predators and scavengers (Barnes 1993, p. 34), or plague may already persist as enzootic throughout Gunnison's prairie dog range.

The impacts of plague outbreaks, which lead to the loss of prairie dog colonies of all sizes (Roach *et al.* 2001, p. 956), are magnified by isolation of colonies. Colony growth after an epizootic is mainly the result of recolonization by inter-colony dispersers (Antolin *et al.* 2002, p. 17). Wagner *et al.* (2006, pp. 334–335) studied cycles of extirpation and recolonization in Gunnison's prairie dogs in Arizona, including a large number of colonies over a large geographic area, and found a significant relationship between the persistence of colonies and the persistence of their nearest neighboring colony. Increased isolation decreases the likelihood of recolonization following a plague outbreak if the distance between the infected colony and the next nearest colony is beyond the dispersal capabilities of the species. For example, Lechleitner *et al.* (1962, pp. 195, 197) documented a 1959 plague outbreak in a Gunnison's prairie dog colony in Colorado that killed all members of the colony. Prior to the outbreak, this colony had been continuously occupied for 20 years, despite several poisoning attempts. Two years after the plague outbreak, the colony still had not been recolonized, likely because it was isolated from other colonies by 8 mi (13 km) (Lechleitner *et al.* 1962, p. 187).

Research is underway on the efficacy of insecticides in protecting various prairie dog species from plague. Biggins and Godby (2005, p. 2) hypothesized that if enzootic plague is affecting populations of prairie dogs, an ambitious effort to remove the disease should result in increased survival rates of prairie dogs. Fleas in Utah prairie dog burrows were effectively controlled by annual treatments of the insecticide deltamethrin; fleas were reduced 96 to 98 percent within one month of treatment (Biggins and Godby 2005, p. 5). Studies of the effects of flea control on black-tailed and white-tailed prairie dogs have shown similar results (Biggins 2007). At this time, chemical dusting of individual prairie dog burrows is labor intensive and expensive.

All recent, major Gunnison's prairie dog colony declines documented in published literature have been attributed to plague epizootics. However, the magnitude of the plague threat appears to be different in the montane and prairie portions of the Gunnison's prairie dog range. Population declines in prairie habitat are less dramatic than those in montane habitat; partial recovery or establishment of new colonies have been documented following plague in the prairie range portion, but are rare or absent following plague outbreaks in the montane range.

We reviewed literature on the status of Gunnison's prairie dog populations within the two portions of the range and, specifically, all published and unpublished literature on the effects of plague on prairie dogs. While some studies were not recent, summarizing them below provides background on the responses of Gunnison's prairie dog populations to plague in each portion of the range.

Effects of Plague in Montane Habitat

Several well-studied colonies within the montane portion of the Gunnison's prairie dog range have been documented as being extirpated, or nearly so, due to plague. The South Park, Colorado, population area included estimated occupied habitat of 915,000 ac (371,000 ha) in 1945; 74,000 ac (30,000 ha) in 1948; and 42 ac (17 ha) in 2002 (CDOW

2007). This decline was largely due to plague and affected a substantial portion of the species' extant occupied habitat in Colorado (at least 15 percent). A plague event in Saguache County, Colorado, that progressed across seven colonies in 2 years left only scattered individuals surviving in two colonies (Lechleitner *et al.* 1968, p. 734). In Gunnison, Saguache, and Montrose Counties, Colorado, plague also was responsible for a decline from 15,569 ac (6,228 ha) of occupied habitat in 1980, to 770 ac (308 ha) in 2002 (note that Montrose County is in the Southwest population area in prairie habitat) (Capodice and Harrell 2003, pp. 5–7). A complete die-off of a colony due to plague in Chubbs Park, Chaffee County, Colorado, occurred in 1959 (Lechleitner *et al.* 1962, p. 185). In August 1958, the population was stable and healthy, but in 1959 an epizootic spread 2 mi (3 km) within 3 months; prairie dogs continued to be absent from the area in 1960 and 1961, and we have no recent information on the existence of prairie dogs in that location. Plague resulted in the complete loss, over a 2-year period, of a colony in South Park, Colorado (Fitzgerald 1970, pp. 68–69).

Approximately 1,000 to 1,500 Gunnison's prairie dogs were killed by an outbreak of plague in a 148-ac (60-ha) colony in Curecanti National Recreation Area near Gunnison, Colorado, in 1981 (Rayor 1985, p. 194). A few animals survived the disease and Gunnison's prairie dogs were again abundant in the area in 1986 (Cully 1989, p. 49). In 2002, 252 ac (102 ha) of habitat in the Recreation Area were occupied by Gunnison's prairie dog colonies (Capodice and Harrell 2003, p. 23), but the current estimate is 12 ac (4.8 ha) (Childers 2007, p. 2). Colonies within the Recreation Area experienced six plague epidemics between 1971 and 2007. Of the 9 historic Gunnison's prairie dog colonies, 3 are currently active, and 2 act as source populations for the main prairie dog concentration area (Childers 2007, p. 1). If the source colonies die off due to plague, repopulation may not be possible because any other Gunnison's prairie dog populations remaining will be separated by distance (more than 6 mi (10 km)) and impassable geographical features such as rivers and mountains (Lomolino *et al.* 2003, p. 116; Pizzimenti and Hoffman 1973, p. 1).

Recently, plague has been implicated in the loss of several large colonies on BLM land within the Gunnison population area (CDOW 2007, p. 4). A large colony southeast of Gunnison, Colorado, that was very active in 2005, was totally devoid of prairie dogs in 2006 and 2007. Four other large colonies in the same vicinity were active in 2006, but by 2007, no prairie dog activity was observed. Plague is the suspected cause of these extirpations, because of the complete elimination of the prairie dogs with no sign of poisoning (CDOW 2007, p. 4).

Fitzgerald (1993, p. 52) expressed concern about the status of the Gunnison's prairie dog in Colorado, indicating that plague had eliminated many populations, including almost all of the populations in South Park. He also suggested that populations appeared to be in poor condition in the San Luis Valley, and were extirpated from the extreme upper Arkansas River Valley, as well as Jefferson, Douglas, and Lake Counties. These areas comprise most of the Gunnison's prairie dog montane habitat in Colorado.

During 1984 through 1987, a plague event reduced the population of Gunnison's prairie dogs in the Moreno Valley of New Mexico from more than 100,000 individuals to between 250 and 500, a decline of greater than 99 percent (Cully *et al.* 1997, pp. 708–711). Although the growth rate of the remaining population increased following the epizootic, another plague event swept through the area in 1988, and the population in July 1996 was still ''a fraction'' of what it had been in 1984 (Cully *et al.* 1997, p. 718).

Occupancy modeling performed in Colorado in 2005 indicated a lower proportion of occupancy in the montane portion of the species' range within Colorado (3.2 percent) than in the prairie portion within Colorado (16.0 percent) (Andelt *et al.* 2006, p. 17; CDOW 2007, p. 19). When the study was repeated over the same plots in 2007, occupancy was again found to be lower (3.6 percent) in the montane range portion in Colorado than in the prairie portion (18.3 percent) (CDOW 2007, p. 19). The only recent threat responsible for whole population declines and extirpations, as documented in the studies cited in this section, is plague.

The frequency of plague epizootics appears to be high in montane habitat due to moister environmental conditions that are conducive to greater flea densities. The impact of plague epizootics in montane habitat is great because the small, isolated populations cannot recolonize. Within the South Park, Gunnison, and Southeast montane population areas in Colorado, no prairie dog complexes that approach a size considered sustainable exist, and only a few small complexes exist within the San Luis Valley population area (CDOW 2007, pp. 1–17). Without a metapopulation structure, an overall decline in persistence takes place (Lomolino and Smith 2001, p. 942).

The landscape status in the montane portion of Gunnison's prairie dog range is characterized by fewer, smaller colonies that are isolated, and few to no complexes or metapopulation structure. Isolation of populations is related to the montane geography in this portion of the range. Gunnison's prairie dogs occupy low valleys and mountain meadows within this habitat (Seglund *et al.* 2005, p. 12), likely because the short growing season at elevations higher than 10,000 ft (3,048 m) limits forage (Andelt *et al.* 2006, p. 17). In addition, mountain topography minimizes the zone of contact between populations (Knowles 2002, p. 3). At least four mountain ranges within the montane portion of the range act as barriers to Gunnison's prairie dog dispersal (Pizzimenti and Hoffman 1973, p. 1). These factors make the prairie dogs in this habitat highly susceptible to plague-related declines, and we have no evidence of long-term recovery from plague in the montane habitat area.

Effects of Plague in Prairie Habitat

The Southwest and the La Plata-Archuleta populations in Colorado are within the prairie portion of Gunnison prairie dog range. The Southwest population comprises the largest population of Gunnison's prairie dogs in Colorado, with an estimated 88,267 ac (35,307 ha) of active colonies. Currently, prairie dogs can be found in nearly any habitat suitable for occupation, although densities are low to very low in native rangeland areas. Plague may be a problem in this area, because periodic die-offs not associated with poisoning or other control measures have been noted by local farmers and ranchers in the past. However, unlike populations in montane habitat within Colorado, these populations appear to rebound from periodic epizootics (CDOW 2007, p. 16).

Populations in the La Plata-Archuleta population area appear to undergo plague outbreaks every 4 to 7 years, which may be limiting some populations (CDOW 2007, p. 7). Occupancy modeling in 2005 and 2007 documented Gunnison's prairie dog occupancy of 17.6 percent and 27.0 percent, respectively, in the Southern Ute Reservation (part of the La Plata-Archuleta population area), and 15.6 percent and 16.3 percent in the Southwest area (CDOW 2007, p. 19). The persistence of these populations, while undergoing repeated plague outbreaks, is likely due to their proximity to other populations within the prairie portion of the species' range

and immigration from those populations.

In Arizona, from 1987 to 2001, an estimated 68 percent reduction in the number of active Gunnison's prairie dog colonies occurred, primarily due to outbreaks of plague (Underwood 2007, p. 18; Wagner and Drickamer 2002, p. 15). However, in the area known as the Coconino Plateau, the area occupied by Gunnison's prairie dogs increased from 2,126 ac (860 ha) in 1992 to 40,942 ac (16,569 ha) in 2007 (Van Pelt 2007, p. 3), suggesting the species can withstand large plague epizootics through colony expansion or recolonization from nearby colonies. In addition, the Aubrey Valley Complex (in northwestern Arizona, the westernmost part of the species' range) has remained stable since at least 1974, despite the presence of plague, and the size of this complex increased from approximately 30,000 ac (12,000 ha) in 1997 (Underwood 2007, p. 23), to 40,000 ac (16,800 ha) in 2005 (Van Pelt 2005, p. 2), to 47,785 ac (19,338 ha) in 2007 (Van Pelt 2007, p. 2). Gunnison's prairie dogs at this site had significantly higher levels of antigens associated with disease-causing pathogens such as plague, the same immune response expected if the prairie dogs had been vaccinated against plague (Wagner and Van Andel 2007, p. 2).

Of 293 colonies surveyed within Gunnison's prairie dog range in Arizona outside of Tribal lands, 57 (19 percent) experienced die-offs during the summers of 2000 and 2001 (Wagner and Drickamer 2002, p. 13). Plague was confirmed as the causative agent for 15 of these 57 colonies but is thought to be the likely cause for them all, because it is the only disease that causes outbreaks with high mortality in prairie dogs (Barnes 1993, p. 34; Wagner and Drickamer 2002, p. 13). During surveys, they also identified the approximate boundaries of two previous plague outbreaks (Wagner and Drickamer 2002, p. 14).

An outbreak occurred over approximately 1,120 square mi (2,900 square km) west of the town of Dilkon, Arizona, on the Navajo Indian Reservation. This outbreak probably occurred in 1995 or 1996 (Wagner and Drickamer 2004, p. 14). Previous surveys in the area documented 45 colonies on 8,649 ac (3,500 ha). Reexamination of these colonies in 2000 and 2001 showed that all but two colonies were inactive. At most of the inactive colonies, burrow entrances were completely closed, and only mounds indicated where they formerly occurred.

An outbreak occurred east of the town of Seligman, Arizona, across approximately 425 square mi (1,100 square km) around 1996. The Arizona Game and Fish Department conducted surveys in this area between 1990 and 1994, and identified 47 active colonies that covered approximately 8,649 ac (3,500 ha). In 1996, die-offs were observed in this area, and the U.S. Centers for Disease Control and Prevention confirmed plague as the cause. Although prairie dog numbers were increasing again in 1998, surveys in 2001 indicated that only 11 of the 47 colonies were active. Possibly another, undocumented, plague outbreak occurred in 1999 or 2000, again reducing the number of individuals (Underwood 2007, p. 19). Despite this persistent plague activity, Gunnison's prairie dogs are becoming reestablished in some areas within the boundaries of the Seligman outbreak (Wagner and Drickamer 2002, pp. 14–15). This apparent resiliency is most likely due to immigration from other colonies in the prairie portion of the species' range.

Plague cycles have been observed in Gunnison's prairie dogs in Utah, and populations have been known to die off and then recover (Lupis *et al.* 2007, p. 32). Because plague testing has not been conducted on Gunnison's prairie dogs in Utah, declines cannot definitively be attributed to the disease (Seglund *et al.* 2005, p. 52). Plague is anticipated to be an ongoing threat to Gunnison's prairie dog populations in Utah at both a localized, and a widespread, scale (Lupis *et al.* 2007, p. 32). The Utah Division of Wildlife Resources recently conducted point surveys and found that occupancy was 15.7 percent. Based on observed occupancy, they estimate that roughly 40,000 ac (16,000 ha) of southeastern Utah were inhabited by Gunnison's prairie dogs in 2007.

Of 65 Gunnison's prairie dog colonies occupied prior to 1984 in west-central New Mexico, 32 (49 percent) were still occupied in 2005 (Luce 2005, p. 4). The active colonies were estimated to cover 5,997 ac (2,399 ha) (Luce 2005, p. 5). The New Mexico Department of Game and Fish recently initiated occupancy modeling surveys similar to those used by CDOW and the Utah Division of Wildlife Resources; however, we currently have no data from that effort.

Summary of Factor C

The studies cited above document the serious impact that plague has on Gunnison's prairie dogs. Although plague antibody titers have been found in a few individuals, periodic epizootic plague events generally kill more than 99 percent of an affected population. Whether individual populations recover from these epizootics depends on two main factors: (1) The availability of other source populations to recolonize an area; and (2) the frequency of epizootic outbreaks, which can reduce population numbers more quickly than individual prairie dogs from neighboring colonies can recolonize.

Populations in the more mesic montane areas of Gunnison's prairie dog range appear to have been widely and severely affected by plague. This may be partly due to climatic conditions such as higher levels of spring moisture, which has been shown to increase flea numbers, and in turn, plague outbreaks. Isolation of prairie dog populations does not seem to protect them from the spread of plague, because it appears that plague exists with all parts of the range at some level, and can be spread by wider-ranging animals. The case studies cited in this section indicate that large populations have been repeatedly affected by plague and have shown no substantial recovery over long periods of time—decades in some cases. This has left smaller, more scattered populations throughout the montane range portion and a complete lack of metapopulation structure, with the result that areas affected by plague are less likely to be recolonized by nearby populations. While little information is currently available on prairie dog movement within this montane habitat, its geography (populations are located in valleys between mountainous areas) probably impedes the ability of prairie dogs to recolonize populations. Within this geographic area, CDOW found slightly more than 3 percent occupancy of surveyed plots.

Although documented population declines due to plague outbreaks also occur in the more xeric prairie portions of Gunnison's prairie dog range, evidence shows that many of these populations recover more rapidly from plague epizootics, probably due to the availability of nearby colonizers. This portion of the range has maintained a metapopulation structure that provides source populations for plague-affected populations. The largest population in Arizona, Aubrey Valley in the driest portion of the range, has been increasing in recent years and shows indications of exposure to plague without the devastating effects observed elsewhere. The CDOW data documents approximately 18 percent occupancy within prairie habitat in Colorado. Studies in Utah and west-central New Mexico indicate a historic decline in habitat occupancy of approximately 50 percent (Wright 2007, p. 3; Luce 2005, p. 4), and a greater decline in Arizona (Wagner and Drickamer 2002, p. 11). While this is significant, it is far less

than the declines seen in the montane habitat area; in addition, metapopulation structure continues to exist, and at least one Gunnison's prairie dog complex (Aubrey Valley, Arizona) is exhibiting some resistance to plague epizootics.

The impacts of plague appear to be ongoing with moderate population-level effects when assessed across the entire range of the Gunnison's prairie dog. Within the prairie portion of the range, plague has reduced the number of populations, and is reducing the size of populations, but has not decimated the existing metapopulation structure. Gunnison's prairie dog colonies in prairie habitat exhibit rebound and recovery from plague epizootics in many population areas due to availability of animals from adjacent colonies. So far, plague has resulted in moderate effects to the species in the prairie portion of the range.

Within the montane portion of the range, plague has significantly reduced the number and size of populations, resulting in high effects to the species. Populations within montane habitat have three distinct disadvantages in resisting the effects of plague:

(1) A higher frequency of epizootics due to the moister montane climate that is conducive to higher abundance of fleas that spread plague;

(2) smaller populations that cannot recover in numbers from plague epizootics; and

(3) isolated populations and no metapopulation structure, due to reduced population sizes from past plague epizootics and montane geography, and therefore a significantly limited ability to recolonize.

After assessing the best available science on the magnitude and extent of the effects of plague, we find that the impact of plague in the montane portion of the Gunnison's prairie dog range is significant. However, plague does not rise to a level of being a significant threat to the Gunnison's prairie dog throughout its range.

D. Inadequacy of Existing Regulatory Mechanisms

Local Laws and Regulations

Approximately 22 percent of potential Gunnison's prairie dog habitat occurs on private lands, and another 30 percent occurs on Tribal lands or lands managed by the Bureau of Indian Affairs (Seglund *et al.* 2005, p. 21). We are not aware of any city, or county ordinances that provide for protection or conservation of the Gunnison prairie dog or its habitat. We recognize that city, county, and Tribal ordinances that address issues such as agricultural lands, transportation, and zoning for various types of land use have the potential to influence the Gunnison's prairie dog or its habitat; for example, zoning that protects open space might retain suitable habitat, and zoning that allows a housing development might destroy or fragment habitat.

Colorado State Statute C.R.S. 30–28–101 exempts parcels of land of 35 ac (14 ha) or more per home from regulation, so county zoning laws in Colorado only restrict developments with housing densities greater than one house per 35 ac (14 ha). This State statute allows some parcels to be exempt from county regulation and may negatively impact some prairie dogs.

Tribal Laws and Regulations

Approximately 49 percent of potential Gunnison's prairie dog habitat occurs on Tribal lands (Seglund *et al.* 2005, p. 21). On the Navajo Nation, Gunnison's prairie dog is classified as small game, and a hunting license is required to shoot them (Cole 2007, p. 4). In general, access and permission to hunt on Tribal lands are limited for non-Tribal members as a result of various trespass laws, but access by Tribal members is not limited. We are aware of no seasonal shooting closures in effect on Tribal land. Work on the Navajo Nation Gunnison's Prairie Dog Management Plan, which will incorporate elements of the Arizona, New Mexico, and Utah State plans, is expected to begin immediately after finalization of the Gunnison's prairie dog rangewide inventory (Cole 2007, p. 5). The Navajo Nation allows lethal and non-lethal removal of Gunnison's prairie dogs for agricultural, human health, and safety purposes (Cole 2007, pp. 4, 5)

We are not aware of any other Tribal ordinances that provide for protection or conservation of the Gunnison prairie dog or its habitat. We recognize that Tribal ordinances that address issues such as agricultural lands, transportation, and zoning for various types of land uses have the potential to influence the Gunnison's prairie dog or its habitat; for example, zoning that protects open space might retain suitable habitat, and zoning that allows a housing development might destroy or fragment habitat.

State Laws and Regulations

Approximately 12 percent of Gunnison's prairie dog potential habitat occurs on State and Federal lands (Seglund *et al.* 2005, pp. 82). Gunnison's prairie dogs are considered a Species of Greatest Conservation Need in Arizona, a State Sensitive Species in Utah, and have no special conservation status in Colorado or New Mexico. All four States discuss the Gunnison's prairie dog in Comprehensive Wildlife Conservation Strategies (Seglund *et al.* 2005, p. 55) that confer no regulatory mechanisms, but assert that the species is at risk, declining, and deserving of special management consideration.

In Arizona, all prairie dog species are classified as nongame mammals, and a hunting license is required to shoot them (Underwood 2007, p. 27). In 2001, the hunting season for Gunnison's prairie dogs was changed from year-round to an April 1 to June 15 closure that applies to Federal, State, and private lands (Underwood 2007, p. 28).

In Colorado, the Gunnison's prairie dog is classified as a small game species, and take is allowed by rifle, handgun, shotgun, handheld bow, crossbow, pellet gun, slingshot, falconry, and toxicants (CDOW 2007, pp. 41–42). A small game license is required, with the exception of private landowners and their immediate family members or designees, who may take Gunnison's prairie dogs causing damage on their lands. Shooting on public lands is not allowed between March 1 and June 14 (no take is permitted in any season on national wildlife refuges) (CDOW 2007, pp. 41–42). During the open season, no bag or possession limits exist; however, contestants in shooting events may take no more than five prairie dogs per event (CDOW 2007, pp. 41–42). No seasonal shooting closures are in effect on private or Tribal lands.

In New Mexico, Gunnison's prairie dogs may be taken year-round without a permit by residents; non-residents are required to obtain a New Mexico hunting license to shoot prairie dogs within the State (Seglund *et al.* 2005, pp. 31, 32).

In Utah, shooting of Gunnison's prairie dogs is prohibited on public lands from April 1 to June 15, but they may be taken on private lands year-round; no license is required for shooting Gunnison's prairie dogs, and no bag limit exists (Lupis *et al.* 2007, pp. 18–19).

Access and permission to hunt on private and Tribal lands are limited as a result of various trespass laws. All States that provide habitat for Gunnison's prairie dogs allow their removal for agricultural, human health, and safety purposes (Seglund *et al.* 2005, p. 46).

The States within the range of the Gunnison's prairie dog developed a Rangewide Conservation Strategy that provides guidance regarding specific activities to include in individual State plans for prairie dog conservation and

management (Seglund *et al.* 2005, p. 55). All of the States with Gunnison's prairie dog habitat are in the process of developing State Conservation Plans. The four plans are in different phases of development but are scheduled for completion by March 2008. The four States have agreed on a monitoring strategy to determine population trends of Gunnison's prairie dog across their range (Van Pelt 2007, p. 2).

Within Colorado, in the montane portion of the species' range, CDOW has designated individual population areas to identify where Gunnison's prairie dogs exist and where management activities should be focused. This portion of the species' range is comprised of the Gunnison, San Luis Valley, South Park, and Southeast population areas.

The Gunnison population area is approximately 68 percent Federal, and 2 percent State, 30 percent private ownership (CDOW 2007, p. 2). The San Luis Valley population area is approximately 40 percent Federal, 6 percent State, and 54 percent private ownership (CDOW 2007, p. 2). The South Park and Southeast population areas are 34 percent Federal, 7 percent State, and 59 percent private ownership. The large percentage of private lands, where minimal regulatory mechanisms exist, appears to compound the effects of shooting and poisoning in this montane portion of the species' range that is already at lower occupancy than the prairie portion of the species, especially in conjunction with plague for which there are no regulatory or protective mechanisms.

United States Federal Laws and Regulations

Federal agencies are responsible for managing approximately 17 percent of Gunnison's prairie dog habitat. The primary Federal agency managing Gunnison's prairie dog habitat is BLM (12 percent); the USFS (4.3 percent), National Park Service (0.5 percent), Department of Defense (0.4 percent), and the Service (0.1 percent) also contribute to management of the species.

Bureau of Land Management

The Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. 1701 *et seq.*) is the primary Federal law governing most land uses on BLM lands. Section 102(a)(8) of FLPMA specifically recognizes wildlife and fish resources as being among the uses for which these lands are to be managed. BLM must consider the needs of wildlife, including general considerations of Gunnison's prairie dogs, when conducting activities in their habitat.

The Gunnison's prairie dog is designated by BLM as a sensitive species in Utah only; therefore, they are not required to provide special protections and mitigation during project and activity planning in Arizona, Colorado, or New Mexico.

BLM's Resource Management Plans (RMPs) are the basis for all of its actions and authorizations involving BLM-administered lands and resources. They establish allowable resource uses; resource condition, goals and objectives to be attained; program constraints and general management practices needed to attain the goals and objectives; general implementation sequences; and intervals and standards for monitoring and evaluating the plan to determine its effectiveness and the need for amendment or revision (43 CFR 1601.0–5(k)).

RMPs provide a framework and programmatic guidance for site-specific activity plans. Site-specific plans address livestock grazing, oil and gas field development, travel management, wildlife habitat management, and other activities. Activity plan decisions normally require National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) analysis.

The BLM has regulatory authority for oil and gas leasing and operating, as provided at 43 CFR 3100 *et seq.* BLM usually incorporates stipulations as a condition of issuing a lease. The BLM's planning handbook has program-specific guidance for fluid minerals (which include oil and gas) that specifies that RMP decision-makers will consider restrictions on areas subject to leasing, including closures, and lease stipulations (BLM 2000, Appendix C, p. 6). The handbook also specifies that all stipulations must have waiver, exception, or modification criteria documented in the plan, and indicates that the least restrictive constraint to meet the resource protection objective should be used (BLM 2000, Appendix C, p. 6). The BLM has regulatory authority to condition drilling permits to include prairie dog conservation stipulations (BLM 2004, pp. 3–60). Some oil and gas leases have a 0.12-mi (0.19-km) stipulation, which allows movement of the drilling area by that distance (BLM 2004). We do not have data to evaluate the effectiveness of BLM's program on prairie dog conservation.

U.S. Forest Service

The Gunnison prairie dog is a USFS Sensitive Species in New Mexico and Colorado, where it is considered to be imperiled (USFS 2007, line 135) based on NatureServe rankings (USFS 2004, pp. 60, 64). Management of Federal activities on National Forest System lands is guided principally by the National Forest Management Act (NFMA) (16 U.S.C. 1600–1614, August 17, 1974, as amended). The NFMA specifies that all national forests and grasslands must have a Land and Resource Management Plan (LRMP) (16 U.S.C. 1600) to guide and set standards for natural resource management activities. The NFMA requires the USFS to incorporate standards and guidelines into LRMPs (16 U.S.C. 1600). This has historically been done through a NEPA process. Provisions to manage plant and animal communities for diversity, based on the suitability and capability of a specific land area, are developed in order to meet overall multiple-use objectives.

The 1982 NFMA implementing regulation for land and resource management planning (1982 rule, 36 CFR 219), under which all existing forest plans were prepared, requires the USFS to manage habitat to maintain viable populations of existing native vertebrate species on National Forest System lands (1982 rule, 36 CFR 219.19). A new USFS planning regulation was promulgated on January 5, 2005 (70 FR 1023), and supersedes the 1982 rule. Plans developed under the new regulation are to be more strategic and less prescriptive in nature than those developed under the 1982 planning rule. For example, previous plans might have included a buffer for activities near the nest sites of birds sensitive to disturbance. Under the new regulation, a desired condition description and guidelines will be provided, rather than a set of prescriptive standards that apply to projects. Planning, and decisions for projects and activities, will address site-specific conditions and identify appropriate conservation measures to take for each project or activity. However, this planning regulation was struck down by the U.S. District Court for the Northern District of California on March 30, 2007, and is not currently in use by the USFS. We are uncertain which direction the USFS is implementing for the Gunnison's prairie dog, or whether Gunnison's prairie dog habitat objectives and conservation measures have been incorporated into grazing allotment plans or LRMPs.

Summary of Factor D

On a basis on a review of the available existing information, it does not appear that the inadequacy of existing regulatory mechanisms is a significant threat to the Gunnison's prairie dog.

However, the percentage of private lands within the montane portion of the species' range results in a paucity of regulatory mechanisms that potentially result in increased shooting and poisoning, which exacerbate the effects of plague in that portion of its range. At this time, no regulatory mechanisms exist to mitigate the effects of plague.

E. Other Natural or Manmade Factors

Poisoning of Gunnison's prairie dogs has historically been documented throughout the species' range, but no evidence indicates that poisoning currently occurs on a broad scale. The WAFWA Gunnison's Prairie Dog Conservation Assessment summarizes poisoning campaigns in the four States (Seglund *et al.* 2005, pp. 56–57). From 1914 to 1964, 2,310,203 ac (934,906 ha) of Gunnison's prairie dog habitat were poisoned in Arizona; 23,178,959 ac (9,380,192 ha) of habitat were poisoned in Colorado; 20,501,301 ac (8,296,582 ha) of habitat were poisoned in New Mexico; and 2,715,930 ac (1,099,098 ha) of habitat were poisoned in Utah. On public lands, poisoning efforts have led to a reduction in occupied habitat, extirpation from local areas, fragmentation, and isolation of colonies. Poisoning in all States became less common after Federal regulation of pesticides was enacted. State and Federal agencies are rarely involved in control efforts unless human health and safety are at risk (Seglund *et al.* 2005, p. 57). Individual landowners may still control prairie dogs on their private property.

No studies indicate that drought has a negative rangewide effect on Gunnison's prairie dogs. Impacts to the Gunnison's prairie dog under predicted future climate change are unclear. A trend of warming in the mountains of western North America is expected to decrease snowpack, hasten spring runoff, and reduce summer flows (IPCC 2007, p. 10). Increased summer heat may increase the frequency and intensity of wildfires (IPCC 2007, p. 14). Given the different climate variables between the montane and prairie geographic areas, populations in prairie habitat may show evidence of effects from climate change earlier than those in montane habitat. While it appears reasonable to assume that Gunnison's prairie dogs may be affected, we lack sufficient certainty on knowing how climate change will affect the species, or the potential changes to the level of threat posed by plague. The most recent literature on climate change includes predictions of hydrologic changes, higher temperatures, and expansion of drought areas, resulting in an upward shift in range for many species (IPCC 2007, pp. 2–5); the higher elevation montane habitat could be essential to future conservation of the Gunnison's prairie dog. We have no knowledge of more detailed climate change information specifically for this montane portion of the Gunnison's prairie dog range.

Summary of Factor E

Although poisoning contributed historically to large declines in occupied area of Gunnison's prairie dogs, there is no information available to indicate that poisoning occurs at more than a localized scale today. Poisoning could have a negative effect on small, isolated populations, particularly in conjunction with disease and shooting; therefore, poisoning in the montane area may be more likely to contribute to the decline of the species by further fragmenting the small populations and curtailing recolonization. No information currently indicates that drought negatively affects or is likely to affect the Gunnison's prairie dog throughout its range, or that climate change will affect the species within the foreseeable future. While poisoning of Gunnison's prairie dogs and the effects of climate change in the montane portion of the range are issues important to monitor, we conclude that no other natural or manmade factors are a significant threat to this species, at this time, throughout all or a significant portion of its range.

Foreseeable Future

When determining whether a species is in danger of extinction throughout all or a significant portion of its range, or is likely to become in danger of extinction in the foreseeable future, we must define that foreseeable future for the species. We do this on a case-by-case basis, taking into account a variety of species-specific factors such as lifespan, genetics, breeding behavior, demography, threat-projection timeframes, and environmental variability. For the purposes of this finding, we define foreseeable future based on a threat-projection timeframe, because plague is likely to be the single greatest factor contributing to the species' future conservation status, as explained below.

Life history characteristics are of secondary relevance to Gunnison's prairie dog foreseeable future. Gunnison's prairie dogs breed once per year and produce an average litter size of 3.77. They can become sexually mature at 1 year of age, but survivorship is less than 60 percent during their first year (Seglund *et al.* 2005, p. 15). These characteristics are relevant to the species' ability to sustain stable populations in the presence of ongoing, low intensity threats such as predation, poisoning, and shooting. However, we find that the ability of populations to recover from plague epizootics is more relevant to the foreseeable future of the species.

As described under Factor C above, prairie dog populations can experience mortality rates of greater than 99 percent during plague epizootics and can be eradicated within one season due to plague. Recovery rates, which are key to population survival, depend on several factors, including susceptibility to plague, frequency of plague outbreaks, habitat quality, and distance to other colonies available for recolonization. Current data frame our analysis and help us understand what factors can reasonably be anticipated to meaningfully affect the species' future conservation status. We have documented that Gunnison's prairie dog occupancy varies significantly across its range, that susceptibility to extirpation by plague is greater in the montane portion of the species' range, and that metapopulation structure does not exist and recolonization is nearly nonexistent in the montane portion of the range. While we have data indicating that Gunnison's prairie dog numbers and populations have decreased, we currently have no data on which to base rates of decline in any portion of that range, which hinders our ability to determine the foreseeable future for the species. We must estimate the foreseeable future of the Gunnison's prairie dog based on current occupancy and our knowledge of the magnitude of the threat of plague. Plague has been shown to nearly extirpate entire population areas over a span of 3 to 10 years (such as South Park and San Luis Valley in Colorado and Moreno Valley in New Mexico) (Fitzgerald 1993; CDOW 2007; Cully *et al.* 1997) and can extirpate small populations in 1 to 2 years (Fitzgerald 1970; Lechleitner *et al.* 1962; Turner 2001).

Plague has been present within the range of the Gunnison's prairie dog for 70 years (Eskey and Haas 1940, p. 6) and will likely continue to exist within the range in perpetuity, because it remains widespread and strongly entrenched among wild rodent populations in the western United States (Barnes 1993, p. 31). Current information suggests that Gunnison's prairie dog has not developed sufficient immunity to reduce the effects of plague; we anticipate it will not develop such immunity within the foreseeable future. Few records document Gunnison's

prairie dog individuals with plague antibody titers (Cully *et al.* 1997, p. 717; Cully and Williams 2001, p. 898). Individual prairie dogs in the Aubrey Valley of Arizona had antigens that provided an immune response similar to that expected if they had been vaccinated; however, the mechanism is unknown—that is, we do not know whether the response is a result of exposure to plague or is innate (Wagner and Van Andel 2007, p. 2), and we do not know if the number of individual prairie dogs that have antigens are enough to protect whole colonies. We have no documented records of resistance being passed to offspring. More studies and testing need to be conducted on a plague vaccine that has had limited success in laboratory experiments on black-tailed prairie dogs; individual black-tailed prairie dogs have developed antigens to plague in response to the vaccine. The vaccine has not yet been tested on Gunnison's prairie dogs, and even if we had an effective vaccine, we currently have no method of applying it to prairie dog populations.

We do not have sufficient information, such as trend data, on the trajectory of plague to develop a precise definition of foreseeable future. In the 70 years plague has been present in Gunnison's prairie dog habitat: (1) Populations in the montane portion of the range have become isolated and no longer comprise a metapopulation structure; and (2) populations in the prairie portion of the range have maintained a metapopulation structure, but occupancy has been reduced by 50 percent or more. The trajectory of plague effects is difficult to assess, because, as populations are reduced in size or extirpated, the effects of plague multiply at a faster rate. Using the best available information, we find that, if occupied habitat within the prairie portion of the range was reduced by at least 50 percent in 70 years, the species could be facing significant effects within a much shorter timeframe than another 70 years. Our best estimate at this time is that within half that time, another 35 years or fewer, plague may eliminate the metapopulation structure remaining within the prairie portion of the range. Therefore, we find that the foreseeable future of the Gunnison's prairie dog is 35 years. It is possible that Gunnison's prairie dogs may develop immunity to plague, or to rebound in numbers that enable it to withstand cyclic outbreaks of the disease, making the trajectory of plague longer than 35 years. It is also possible that plague will continue on a more rapid trajectory that extirpates populations at a rate we can't anticipate. However, we find that an estimate of 35 years as the foreseeable future of the Gunnison's prairie dog is reasonable, because it focuses this status review on the known effects from plague, and our best assessment that prairie dogs will not soon develop immunity to the disease. We know of no other species that have developed an immunity to plague.

Based on currently available data on the continued presence of plague and its effects, we have determined that the species, rangewide, is not likely to become endangered within the foreseeable future, which we have determined to be the year 2043. However, while some populations in the montane portion of the range have so far persisted, their long-term viability is compromised by the lack of metapopulation structure. In the prairie portion of the range, the many more populations and the metapopulation structure that enable recolonization after plague epizootics, continue to persist, and in our judgment, will continue to persist into the foreseeable future.

Significant Portion of the Range Analysis

As required by the Act, we considered the five potential threat factors to assess whether the Gunnison's prairie dog is threatened or endangered throughout all or a significant portion of its range. When considering the listing status of the species, the first step in the analysis is to determine whether the species is in danger of extinction throughout all of its range. If this is the case, then we list the species in its entirety. For instance, if the threats to a species are directly acting on only a portion of its range, but they are at such a large scale that they place the entire species in danger of extinction, we would list the entire species.

We next consider whether any significant portion of the Gunnison's prairie dog range meets the definition of endangered or is likely to become endangered in the foreseeable future (threatened). On March 16, 2007, a formal opinion was issued by the Solicitor of the Department of the Interior, ''The Meaning of 'In Danger of Extinction Throughout All or a Significant Portion of Its Range' '' (DOI 2007). A portion of a species' range is significant if it is part of the current range of the species and is important to the conservation of the species because it contributes meaningfully to the representation, resiliency, or redundancy of the species. The contribution must be at a level such that its loss would result in a decrease in the ability of the species to persist.

The first step in determining whether a species is threatened or endangered in a significant portion of its range is to identify any portions of the range of the species that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. To identify portions that warrant further consideration, we determine whether there is substantial information indicating that (1) the portions may be significant, and (2) the species may be in danger of extinction there or likely to become so within the foreseeable future. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are essentially uniform throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats applies only to portions of the range that are unimportant to the conservation of the species, such portions will not warrant further consideration.

If we identify any portions that warrant further consideration, we then determine whether the species is threatened or endangered in any significant portion. If we determine that a portion of the range is not significant, we do not determine whether the species is threatened or endangered there.

The terms ''resiliency,'' ''redundancy,'' and ''representation'' are intended to be indicators of the conservation value of portions of the range. Resiliency of a species allows it to recover from periodic disturbances. A species will likely be more resilient if large populations exist in high-quality habitat that is distributed throughout its range in a way that captures the environmental variability available. A portion of the range of a species may make a meaningful contribution to the resiliency of the species if the area is relatively large and contains particularly high-quality habitat, or if its location or characteristics make it less susceptible to certain threats than other portions of the range. When evaluating whether or how a portion of the range contributes to resiliency of the species, we evaluate the historical value of the portion and how frequently the portion is used by the species, if possible. The range portion may contribute to resiliency for other reasons; for instance, it may contain an important concentration of certain types of habitat that are necessary for the species to carry out its life-history functions, such as breeding,

feeding, migration, dispersal, or wintering.

Redundancy of populations may be needed to provide a margin of safety for the species to withstand catastrophic events. This concept does not mean that any portion that provides redundancy is per se a significant portion of the range of a species. The idea is to conserve enough areas of the range so that random perturbations in the system only act on a few populations. Therefore, we examine each area based on whether that area provides an increment of redundancy that is important to the conservation of the species.

Adequate representation ensures that the species' adaptive capabilities are conserved. Specifically, we evaluate a range portion to see how it contributes to the genetic diversity of the species. The loss of genetically based diversity may substantially reduce the ability of the species to respond and adapt to future environmental changes. A peripheral population may contribute meaningfully to representation if there is evidence that it provides genetic diversity due to its location on the margin of the species' habitat requirements.

Based on the discussion above, we identified the montane portion of the current range of the Gunnison's prairie dog as warranting further consideration to determine if it is a significant portion of the range that is threatened or endangered. This portion of the range in central and south-central Colorado, and north-central New Mexico, constitutes approximately 40 percent of the current overall range.

Defining Portions of the Range

In defining the portion of the current range that we considered further, we relied on range maps produced by mammalogists and geneticists that delineate the boundaries of the montane and prairie portions of the Gunnison's prairie dog's range. We believe the threats to the species are significantly different in the two range portions. The geography of each area differs significantly, affecting the ability of the prairie dog to respond to threats. Unpublished genetic analysis shows differences in Gunnison's prairie dogs between the two areas (Hafner *et al.* 2005, p. 2). This analysis is not yet complete enough to definitively indicate that two separate subspecies exist; however, along with subspecies delineation, the data also point to possible differences in Gunnison's prairie dog adaptations due to physical geography.

We assessed whether we should consider smaller geographic units, such as population areas. Given the best scientific and commercial information available, we found that individual population areas did not meaningfully contribute to the representation, resiliency, or redundancy of the species.

The scale at which we define the range of a particular species, that is, at a relatively coarse or fine scale, depends on the life history of the species, the data available, and the purpose for defining the range.

As with other determinations under the Act, we define the current range on the basis of the best available data. The purpose of defining range (and hence the significant portion of the range) is to set the boundaries of the protections of the Act. Therefore, defining the boundaries too narrowly may lead to the failure to protect some Gunnison's prairie dogs. We have determined that it is appropriate to use a relatively coarse scale to capture all of the areas where the best available data suggests the Gunnison's prairie dog is likely to occur.

The map boundaries in Figure 1 above show the Gunnison's prairie dog range. Discovery of currently existing Gunnison's prairie dog populations outside these boundaries is unlikely. The map boundaries show the significant montane portion, which is inclusive of all areas likely to support Gunnison's prairie dog populations in the montane habitat.

Significance of the Montane Range

When Gunnison's prairie dog colonies are well distributed across their current range, which currently includes an estimated 5 percent of the historical range, they are less susceptible to extinction than when colonies are confined to only a portion of their range. The montane habitat within Gunnison's prairie dog range contains populations significant to the overall viability of the species, because they represent:

- Approximately 40 percent of the species' current habitat;
- Populations in unique, higher elevation habitat, and adaptations relevant to this habitat;
- Genetic material substantially unique within the range of the Gunnison's prairie dog (Hafner 2004, p. 6; Hafner *et al.* 2005, p. 2).

The relatively large proportion of the entire range represented by the montane habitat adds a significant number of Gunnison's prairie dog populations widely distributed throughout distinct geographic areas. Losses of populations in montane habitat would affect the representation, resiliency, and redundancy of the species by increasing risk of extirpation by a natural or anthropogenic event, reducing adaptive characteristics to geographical or climatic conditions, and reducing remaining genetic variation.

The most recent literature on climate change includes predictions of hydrologic changes, higher temperatures, and expansion of drought areas, resulting in an upward shift in range for many species (IPCC 2007, pp. 2–5); the higher elevation montane habitat could be essential to future conservation of the Gunnison's prairie dog. These factors lead us to the conclusion that loss of the Gunnison's prairie dog within the montane portion of its range would reduce the ability of the species to persist.

Status of Montane Range

If we identify any range portions as significant, we then determine whether the species is threatened or endangered in this significant portion of its range.

Summary of Factors Affecting the Species Within the Montane Portion of the Range

We evaluated whether threats to the Gunnison's prairie dog may affect its survival within the montane portion of its range, separately from the entire range. Our evaluation of threats within the montane portion of the range (based on information provided in the petition, available in our files, and available in published and unpublished studies and reports) is presented below.

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

Conservation principles indicate that smaller, more isolated populations are more vulnerable to extirpation (Barnes 1993, p. 34; Cully 1993, p. 43; Fitzgerald 1970, p. 78; Gilpin and Soule 1986, pp. 30–31; Miller *et al.* 1994, p. 151; Mulhern and Knowles 1995, p. 21; Wilcox and Murphy 1985, p. 883; Wuerthner 1997, p. 464). Lomolino *et al.* (2003, p. 116) found that persistence of Gunnison's prairie dog colonies increased significantly with larger colony size and decreased isolation. The populations within the montane portion of the range are smaller and more isolated. However, we found no studies or data that specifically assess the magnitude of the threats related to agriculture land conversions, urbanization, grazing, roads, and oil and gas leasing, and resulting fragmentation within the montane portion of Gunnison's prairie dog habitat.

After assessing the best available science on the magnitude and extent of

the effects of agricultural land conversion, urbanization, grazing, roads, oil and gas development, and fragmentation of habitat, we find that the destruction, modification, and curtailment of Gunnison's prairie dog's habitat or range are not significant threats within the montane portion of the range. Agriculture, urbanization, roads, and oil and gas development each currently affect a small percentage of Gunnison's prairie dog habitat. Effects of livestock grazing, while widespread, have not resulted in measurable population declines.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

We have determined that shooting continues to be a threat to the Gunnison's prairie dog within the montane portion of its range and contributes to the decline of the species when combined with the effects of disease (see Factor C below). However, this threat is being monitored and managed by the States of Colorado and New Mexico, and modeling results suggest seasonal shooting closures implemented in Colorado will likely reduce population-level losses. Therefore, we have determined that overutilization for commercial, recreational, scientific, or educational purposes is not a significant threat to the Gunnison's prairie dog within the montane portion of its range.

C. Disease or Predation

Several well-studied colonies within the montane portion of the Gunnison's prairie dog range have been documented as being extirpated, or nearly so, due to plague. The South Park, Colorado, population area included estimated occupied habitat of 915,000 ac (371,000 ha) in 1945; 74,000 ac (30,000 ha) in 1948; and 42 ac (17 ha) in 2002 (CDOW 2007). This decline was largely due to plague and affected a substantial portion of the species' extant occupied habitat in Colorado (at least 15 percent). Plague resulted in the complete loss, over a 2-year period, of a colony within the South Park population area (Fitzgerald 1970, pp. 68–69). A plague event in Saguache County, Colorado, that progressed across seven colonies in 2 years left only scattered individuals surviving in two colonies (Lechleitner *et al.* 1968, p. 734). In Gunnison, Saguache, and Montrose Counties, Colorado, plague also was responsible for a decline from 15,569 ac (6,228 ha) of occupied habitat in 1980, to 770 ac (308 ha) in 2002 (note that Montrose County is in the Southwest population area in prairie habitat) (Capodice and Harrell 2003, pp. 5–7). A complete die-off of a colony due to plague in Chubbs Park, Chaffee County, Colorado, occurred in 1959 (Lechleitner *et al.* 1962, p. 185). In August 1958, the population was stable and healthy, but in 1959 an epizootic spread 2 mi (3 km) within 3 months; prairie dogs continued to be absent from the area in 1960 and 1961, and we have no recent information on the existence of prairie dogs in that location.

Approximately 1,000 to 1,500 Gunnison's prairie dogs were killed by an outbreak of plague in a 148–ac (60–ha) colony in Curecanti National Recreation Area near Gunnison, Colorado, in 1981 (Rayor 1985, p. 194). A few animals survived the disease and Gunnison's prairie dogs were again abundant in the area in 1986 (Cully 1989, p. 49). In 2002, 252 ac (102 ha) of habitat in the Recreation Area were occupied by Gunnison's prairie dog colonies (Capodice and Harrell 2003, p. 23), but the current estimate is 12 ac (4.8 ha) (Childers 2007, p. 2). Colonies within the Recreation Area experienced six plague epidemics between 1971 and 2007. Of the 9 historic Gunnison's prairie dog colonies, 3 are currently active, and 2 act as source populations for the main prairie dog concentration area (Childers 2007, p. 1). If the source colonies die off due to plague, repopulation may not be possible because any other Gunnison's prairie dog populations remaining will be separated by distance (more than 6 mi (10 km)) and impassable geographical features such as rivers and mountains (Lomolino *et al.* 2003, p. 116).

Recently, plague has been implicated in the loss of several large colonies on BLM land within the Gunnison, Colorado, population area (CDOW 2007, p. 4). A large colony southeast of Gunnison that was very active in 2005 was totally devoid of prairie dogs in 2006 and 2007. Four other large colonies in the same vicinity were active in 2006, but by 2007, no prairie dog activity was observed. Plague is the suspected cause of these extirpations because of the complete elimination of the prairie dogs with no sign of poisoning (CDOW 2007, p. 4).

Fitzgerald (1993, p. 52) expressed concern about the status of the Gunnison's prairie dog in Colorado, indicating that plague had eliminated many populations, including almost all of the populations in South Park. He also suggested that populations appeared to be in poor condition in the San Luis Valley and were extirpated from the extreme upper Arkansas River Valley, as well as Jefferson, Douglas, and Lake Counties. These areas comprise most of the Gunnison's prairie dog montane habitat in Colorado.

From 1984 through 1987, a plague event reduced the population of Gunnison's prairie dogs in the Moreno Valley of New Mexico from more than 100,000 individuals to between 250 and 500, a decline of greater than 99 percent (Cully *et al.* 1997, pp. 708–711). Although the remaining population rebounded (increased in size to a certain extent) following the epizootic, another plague event swept through the area in 1988, and the population in July 1996 was still only a small fraction of what it had been in 1984 (Cully *et al.* 1997, p. 717).

Occupancy modeling performed for Colorado in 2005 indicated a lower proportion of occupancy in the montane portion of the species' range within Colorado (3.2 percent) than in the prairie portion within Colorado (16.0 percent) (Andelt *et al.* 2006, p. 17; CDOW 2007, p. 19). When the study was repeated over the same plots in 2007, occupancy was again found to be lower (3.6 percent) in the montane range portion in Colorado than in the southwestern portion (18.3 percent) (CDOW 2007, p. 19). The only recent threat responsible for whole population declines and extirpations, as documented in the studies cited in this section, is plague.

The frequency of plague epizootics appears to be high in montane habitat due to moister environmental conditions that are conducive to greater flea densities. The impact of plague epizootics in montane habitat is great because the small, isolated populations cannot recolonize. Within the South Park, Gunnison, and Southeast montane population areas in Colorado, no prairie dog complexes of appreciable size exist, and only a few small complexes exist within the San Luis Valley population area (CDOW 2007, pp. 1–17). Without a metapopulation structure, an overall decline in persistence takes place (Lomolino and Smith 2001, p. 942).

The landscape status in the montane portion of Gunnison's prairie dog range is characterized by fewer, smaller colonies that are isolated, and few to no complexes or metapopulation structure. These factors make the prairie dogs in this habitat highly susceptible to plague-related declines, and we have no evidence of recovery from plague in the montane habitat area.

The studies cited above document the serious impact that plague has on Gunnison's prairie dogs within the montane portion of the range. Although plague antibody titers have been found in a few individuals, periodic epizootic plague events generally kill more than

99 percent of an affected population. Whether individual populations recover from these epizootics depends on two main factors: (1) The availability of other source populations to recolonize an area; and (2) the frequency of epizootic outbreaks, which can reduce population numbers more quickly than individual prairie dogs from neighboring colonies can recolonize.

Populations in the more mesic montane areas of Gunnison's prairie dog range appear to have been widely and severely affected by plague. This may be partly due to climatic conditions, such as higher levels of spring moisture, which has been shown to increase flea numbers, and in turn, plague outbreaks. Isolation of prairie dog populations does not seem to protect them from the spread of plague, because it appears that plague exists with all parts of the range at some level and can be spread by wider-ranging animals. The case studies cited in this section indicate that large populations have been repeatedly affected by plague and have shown no substantial recovery over long periods of time—decades in some cases. This has left smaller, more scattered populations throughout the montane range portion, with the result that areas affected by plague are less likely to be recolonized by nearby populations. While little information is currently available on prairie dog movement within this montane habitat, its geography (populations are located in valleys between mountainous areas) probably impedes the ability of prairie dogs to recolonize populations. Within this geographic area, CDOW found slightly more than 3 percent occupancy of surveyed plots (CDOW 2007, p.19).

Populations within montane habitat have three distinct disadvantages in resisting the effects of plague:

(1) A higher frequency of epizootics due to the moister montane climate that is conducive to higher abundance of fleas that spread plague;

(2) smaller populations that cannot recover in numbers from plague epizootics; and

(3) isolated populations and no metapopulation structure, due to reduced population sizes from past plague epizootics and montane geography, and therefore a significantly limited ability to recolonize.

After assessing the best available science on the magnitude and extent of the effects of plague, we find that plague is significantly impacting the species in the montane portion of its range.

D. Inadequacy of Existing Regulatory Mechanisms

On the basis on a review of the available existing information, it does not appear that the inadequacy of existing regulatory mechanisms is a significant threat to the Gunnison's prairie dog. However, the percentage of private lands within the montane portion of the species' range results in a paucity of regulatory mechanisms that potentially result in increased shooting and poisoning, which exacerbate the effects of plague in that portion of its range. At this time, no regulatory mechanisms exist to mitigate the effects of plague.

E. Other Natural or Manmade Factors

Poisoning could have a negative effect on small, isolated populations, particularly in conjunction with disease and shooting; therefore, poisoning in the montane area may be more likely to contribute to the decline of the species by further fragmenting the small populations and curtailing recolonization. However, while poisoning bears monitoring, at this time, we conclude that it is not significantly affecting the populations within this portion of the range. No information currently indicates that drought negatively affects, or is likely to affect, the Gunnison's prairie dog within the montane portion of its range, or that climate change will affect the species within the foreseeable future; however, various scenarios are plausible. We conclude that no other natural or manmade factors are a significant threat to this species, at this time, throughout the montane portion of its range.

Finding

The information summarized in this status review includes substantial information that was not available at the time of the 90-day petition finding (71 FR 6241, February 7, 2006) and other information we received during the public comment period following the publication of the 90-day finding. This 12-month finding reflects and incorporates information we received during the public comment period or obtained through consultation, literature research, and field visits, and responds to significant issues identified. We determined that the Gunnison's prairie dog does not meet the definition of threatened or endangered throughout its entire range, because, within approximately 60 percent of its range (the prairie habitat in the southwestern portion of its range), the threats (primarily plague) are not of a magnitude that currently puts the species in danger of extinction (endangered), or makes it likely to become endangered within the foreseeable future (threatened). However, we determined that the Gunnison's prairie dog is warranted for listing within the montane portion of its range (approximately 40 percent of the species total range).

The determination of a finding of threatened or endangered involves weighing the magnitude and immediacy of the threats. The cumulative magnitude of threats within the montane portion of the range is high. Immediacy of threats varies geographically across the montane range, but is high in areas of the montane habitat where populations have already been extirpated, primarily the South Park and Southeast population areas.

Within the prairie portion of the Gunnison's prairie dog's range, colonies are subject to the same threats, but at a different magnitude. Plague has the same potential to reduce population size significantly there as in montane habitat, but due to more open geography, an existing metapopulation structure, larger population sizes, and proximity of other colonies, recolonization has been observed. The ability of populations to recolonize relatively quickly enables them to recover more fully between plague enzootics. Ability to recolonize in prairie habitat also enables Gunnison's prairie dog populations to recover from poisoning and shooting, which act to exacerbate the more significant threat from plague. The species' status in this portion of the range is characterized by a metapopulation structure, and larger colonies and complexes that are better able to recover from plague epidemics, to be recolonized after plague epizootics, and even to colonize new areas.

We determined that the Gunnison's prairie dog is warranted for listing within the montane portion of its range (approximately 40 percent of the species total range). We find that threats, primarily plague, exist in the montane portion of their range at a magnitude that make the species likely to become threatened or endangered within the foreseeable future, which we have determined to be the year 2043. We determined that Gunnison's prairie dog populations within the prairie portion of the range continue to be viable due to the functioning metapopulation structure and the apparent resistance to plague epizootics within the Aubrey Valley, Arizona, complex. Therefore, we find that the Gunnison's prairie dog does not warrant listing throughout its

entire range, but that populations within the montane portion of its range are significant to the continued existence of the species and warrants listing in that portion only (see discussion under Significant Portion of the Range Analysis). However, listing the montane Gunnison's prairie dog is warranted but precluded at this time by pending proposals for other species with higher listing priorities based on taxonomic uniqueness (the only species described for the genus), or other species that are not currently listed (see discussion under Preclusion and Expeditious Progress).

If future genetic analyses or taxonomic studies indicate conclusively that two subspecies of Gunnison's prairie dogs exist, this would affect our proposed listing. Instead of defining the montane habitat as a significant portion of the range, we would propose listing the subspecies that exists in that habitat.

Sylvatic plague is the only significant factor affecting the future conservation status of the species. Within the montane portion of the species' range, the threat of plague has greater magnitude, and colony recovery from plague is slow or nonexistent. Distributional data indicate that the species' status in this portion of its range is characterized by lower occupancy, smaller colony sizes, and fragmented and isolated colonies that impede recovery and persistence of populations. Reliable data regarding the status of the Gunnison's prairie dog are predominantly in the form of percent occupancy studies, which indicate significantly lower occupancy in montane habitat (for Colorado, approximately 3.6 percent versus 18.3 percent in prairie habitat). For example, the South Park population area, which comprises nearly 15 percent of the species' habitat in Colorado, is nearly devoid of the species. Within the four montane population areas in Colorado, prairie dog complexes exist within only one, and those complexes are few and small. With little or no metapopulation structure, an overall decline in persistence is apparent in the montane habitat.

Populations within montane habitat have three distinct disadvantages in resisting the effects of plague: (1) A higher frequency of epizootics due to the moister montane climate that is conducive to higher abundance of fleas that spread plague; (2) smaller populations that cannot recover in numbers from plague epizootics; and (3) isolated populations and little or no metapopulation structure, due to reduced population sizes from past plague epizootics and montane geography, and therefore a significantly limited ability to recolonize.

Some lands within the montane range supporting the Gunnison's prairie dog are controlled by Federal or State agencies, or have been set aside as open space by local governments. However, a greater portion of the montane range is private land with fewer regulatory mechanisms in place for conserving prairie dogs.

We found that poisoning and shooting are not significant threats rangewide. While they can have greater impacts on small populations by compounding the effects from the primary threat of plague and further decreasing colony size and fragmenting and isolating colonies, at this time poisoning and shooting do not appear to be occurring at a level that raises concern above that related to plague. Cumulative threats do, however, impede recovery of some populations and imperil others. Where recovery does not occur, Gunnison's prairie dog populations are likely to remain small, fragmented, and susceptible to extirpation.

The following summarizes the key points leading to our finding:

(1) Historic data indicate a decline from 24,000,000 ac (9,700,000 ha) of occupied habitat to between 340,000 and 500,000 ac (136,000 to 200,000 ha).

(2) Recent data indicate that approximately 3.6 percent of potential Gunnison's prairie dog habitat is occupied in the montane portion of the range, as compared to 18.3 percent occupancy in the prairie portion of the range.

(3) The Gunnison's prairie dog occupies two genetically important areas of its range (prairie and montane portions). The two portions have different geographical features and different responses to plague.

(4) Plague has resulted in large reductions in prairie dogs and occupied habitat within both portions of the range. The prairie portion of the range is responding to plague by recolonizing affected populations. Within the montane portion of the range, the plague response is more significant (large population losses, loss of all metapopulation structure, nearly no recolonization occurring, and entire population areas nearly devoid of prairie dogs).

(5) We determined that the Gunnison's prairie dog is warranted for listing in the montane portion because:

(A) The montane portion of the range is significant to the species' viability (it represents approximately 40 percent of the species' habitat; populations are adapted to unique, montane habitat; and these animals are genetically unique).

(B) Loss of Gunnison's prairie dogs in the montane portion would affect:

(i) resiliency of the species, because the montane portion represents approximately 40 percent of the species range, and the small, isolated populations are not likely to rebound after decimation from plague;

(ii) redundancy of the species, because random perturbations are not likely to act equally on both the montane and prairie portions; and

(iii) representation of the species, because the montane population is genetically distinct from the prairie population and the species' remaining genetic diversity would be reduced.

(C) The species is warranted for listing in this portion of the range because:

(i) Occupancy data (3 percent) is significantly lower in the montane range portion.

(ii) The montane portion of the range no longer has a metapopulation structure, and populations reduced by plague have not rebounded; repopulation from nearby populations has been curtailed by distance and geographical barriers.

(iii) The two portions of the range are separated by mountain ranges that almost completely limit prairie dog movement between them.

(iv) Populations within the montane portion of the range are separated from each other by four mountain ranges and several large rivers, which preclude repopulation after plague epizootics.

(v) Some entire population areas within montane range are now nearly devoid of Gunnison's prairie dogs.

(vi) Plague appears to be more prevalent in the montane portion of the range, possibly due to greater flea populations that thrive in moister climates.

We determined that the magnitude of threats affecting the Gunnison's prairie dog in the montane portion of its range is ''high,'' because plague is significantly affecting the remaining small, isolated populations, and plague epizootics can extirpate populations there within a short timeframe (3 to 10 years); metapopulation structure in the prairie portion of the range exists, facilitating recolonization when populations are extirpated. We find that the threat posed by plague is ''imminent'' because plague epizootics are known to be occurring and the effects are measurable. Therefore, pursuant to our September 21, 1983 (48 FR 43098) Listing and Recovery Priority Guidelines, we assign a LPN of 2 to this portion of the species' range.

We reviewed the available information to determine if existing and

foreseeable threats to the Gunnison's prairie dog within montane habitat are of sufficient extent and magnitude to require emergency listing as threatened or endangered. We have determined that an emergency listing is not warranted for this species at this time, because populations are currently not threatened in the prairie portion of the range, and because emergency listing would not lessen the effects from plague, which is the significant threat in the montane portion of the range.

Preclusion and Expeditious Progress

Preclusion is a function of the listing priority of a species in relation to the resources that are available and competing demands for those resources. Thus, in any given fiscal year (FY), multiple factors dictate whether it will be possible to undertake work on a proposed listing regulation or whether promulgation of such a proposal is warranted but precluded by higher-priority listing actions.

The resources available for listing actions are determined through the annual Congressional appropriations process. The appropriation for the Listing Program is available to support work involving the following listing actions: proposed and final listing rules; 90-day and 12-month findings on petitions to add species to the Lists of Endangered and Threatened Wildlife and Plants or to change the status of a species from threatened to endangered; annual determinations on prior ''warranted but precluded'' petition findings as required under section 4(b)(3)(C)(i) of the Act; proposed and final rules designating critical habitat; and litigation-related, administrative, and program management functions (including preparing and allocating budgets, responding to Congressional and public inquiries, and conducting public outreach regarding listing and critical habitat). The work involved in preparing various listing documents can be extensive and may include, but is not limited to: gathering and assessing the best scientific and commercial data available and conducting analyses used as the basis for our decisions; writing and publishing documents; and obtaining, reviewing, and evaluating public comments and peer review comments on proposed rules and incorporating relevant information into final rules. The number of listing actions that we can undertake in a given year also is influenced by the complexity of those listing actions; that is, more complex actions generally are more costly. For example, during the past several years, the cost (excluding publication costs) for preparing a 12-month finding, without a proposed rule, has ranged from approximately $11,000 for one species with a restricted range and involving a relatively uncomplicated analysis to $305,000 for another species that is wide-ranging and involving a complex analysis.

We cannot spend more than is appropriated for the Listing Program without violating the Anti-Deficiency Act (see 31 U.S.C. 1341(a)(1)(A)). In addition, in FY 1998 and for each fiscal year since then, Congress has placed a statutory cap on funds which may be expended for the Listing Program, equal to the amount expressly appropriated for that purpose in that fiscal year. This cap was designed to prevent funds appropriated for other functions under the Act (for example, recovery funds for removing species from the Lists), or for other Service programs, from being used for Listing Program actions (see House Report 105–163, 105th Congress, 1st Session, July 1, 1997).

Recognizing that designation of critical habitat for species already listed would consume most of the overall Listing Program appropriation, Congress also put a critical habitat subcap in place in FY 2002 and has retained it each subsequent year to ensure that some funds are available for other work in the Listing Program: ''The critical habitat designation subcap will ensure that some funding is available to address other listing activities'' (House Report No. 107–103, 107th Congress, 1st Session, June 19, 2001). In FY 2002 and each year until FY 2006, the Service has had to use virtually the entire critical habitat subcap to address court-mandated designations of critical habitat, and consequently none of the critical habitat subcap funds have been available for other listing activities. In FY 2007, we were able to use some of the critical habitat subcap funds to fund proposed listing determinations for high-priority candidate species; we expect to also be able to do this in FY 2008.

Thus, through the listing cap, the critical habitat subcap, and the amount of funds needed to address court-mandated critical habitat designations, Congress and the courts have in effect determined the amount of money available for other listing activities. Therefore, the funds in the listing cap, other than those needed to address court-mandated critical habitat for already listed species, set the limits on our determinations of preclusion and expeditious progress.

Congress also recognized that the availability of resources was the key element in deciding whether, when making a 12-month petition finding, we would prepare and issue a listing proposal or make a ''warranted but precluded'' finding for a given species. The Conference Report accompanying Public Law 97–304, which established the current statutory deadlines and the warranted-but-precluded finding, states (in a discussion on 90-day petition findings that by its own terms also covers 12-month findings) that the deadlines were ''not intended to allow the Secretary to delay commencing the rulemaking process for any reason other than that the existence of pending or imminent proposals to list species subject to a greater degree of threat would make allocation of resources to such a petition [that is, for a lower-ranking species] unwise.''

In FY 2008, expeditious progress is that amount of work that can be achieved with $8,206,940, which is the amount of money that Congress appropriated for the Listing Program at this time (that is, the portion of the Listing Program funding not related to critical habitat designations for species that are already listed). Our process is to make our determinations of preclusion on a nationwide basis to ensure that the species most in need of listing will be addressed first and also because we allocate our listing budget on a nationwide basis. The $8,206,940 for listing activities (that is, the portion of the Listing Program funding not related to critical habitat designations for species that already are listed) will be used to fund work in the following categories: compliance with court orders and court-approved settlement agreements requiring that petition findings or listing determinations be completed by a specific date; section 4 (of the Act) listing actions with absolute statutory deadlines; essential litigation-related, administrative, and program management functions; and high-priority listing actions. The allocations for each specific listing action are identified in the Service's FY 2008 Draft Allocation Table (part of our administrative record). We are working on completing our allocation at this time. More funds are available in FY 2008 than in previous years to work on listing actions that are not the subject of court orders or court-approved settlement agreements.

Our decision that a proposed rule to list the montane portion of the Gunnison's prairie dog is warranted but precluded includes consideration of its listing priority. In accordance with guidance we published on September 21, 1983, we assign an LPN to each candidate species (48 FR 43098). Such a priority ranking guidance system is required under section 4(h)(3) of the Act

(16 U.S.C. 1533(h)(3)). Using this guidance, we assign each candidate an LPN of 1 to 12, depending on the magnitude of threats (high vs. moderate to low), immediacy of threats (imminent or non-imminent), and taxonomic status of the species, in order of priority (monotypic genus (a species that is the sole member of a genus), species, subspecies, distinct population segment, or significant portion of the range). The lower the listing priority number, the higher the listing priority (that is, a species with an LPN of 1 would have the highest listing priority).

We currently have more than 120 species with an LPN of 2. Therefore, we further rank the candidate species with an LPN of 2 by using the following extinction-risk type criteria: International Union for the Conservation of Nature and Natural Resources (IUCN) Red list status/rank, Heritage rank (provided by NatureServe), Heritage threat rank (provided by NatureServe), and species currently with fewer than 50 individuals, or 4 or fewer populations. Those species with the highest IUCN rank (critically endangered), the highest Heritage rank (G1), the highest Heritage threat rank (substantial, imminent threats), and currently with fewer than 50 individuals, or fewer than 4 populations, comprise a list of approximately 40 candidate species (''Top 40''). These 40 candidate species have the highest priority to receive funding to work on a proposed listing determination. To be more efficient in our listing process, as we work on proposed rules for these species in the next several years, we are preparing multi-species proposals when appropriate, and these may include species with lower priority if they overlap geographically or have the same threats as a species with an LPN of 2. In addition, available staff resources are also a factor in determining high-priority species provided with funding. Finally, proposed rules for reclassification of threatened species to endangered are lower priority, since the listing of the species already affords the protection of the Act and implementing regulations. We assigned the montane portion of the Gunnison's prairie dog an LPN of 5, based on our finding that the species faces threats of high magnitude that are not imminent.

As explained above, a determination that listing is warranted but precluded must also demonstrate that expeditious progress is being made to add or remove qualified species to and from the Lists of Endangered and Threatened Wildlife and Plants. (We note that we do not discuss specific actions taken on progress towards removing species from the Lists because that work is conducted using appropriations for our Recovery program, a separately budgeted component of the Endangered Species Program. As explained above in our description of the statutory cap on Listing Program funds, the Recovery Program funds and actions supported by them cannot be considered in determining expeditious progress made in the Listing Program.) As with our ''precluded'' finding, expeditious progress in adding qualified species to the Lists is a function of the resources available and the competing demands for those funds. Our expeditious progress in FY 2007 in the Listing Program, up to the date of making this finding for the Gunnison's prairie dog, included preparing and publishing the following determinations:

FY 2007 COMPLETED LISTING ACTIONS

Publication date	Title	Actions	FR pages
10/11/2006	Withdrawal of the Proposed Rule To List the Cow Head Tui Chub (*Gila biocolor vaccaceps*) as Endangered.	Final withdrawal, Threats eliminated.	71 FR 59700–59711
10/11/2006	Revised 12-Month Finding for the Beaver Cave Beetle (*Pseudanophthalmus major*).	Notice of 12-month petition finding, Not warranted.	71 FR 59711–59714
11/14/2006	12-Month Finding on a Petition To List the Island Marble Butterfly (*Euchloe ausonides insulanus*) as Threatened or Endangered.	Notice of 12-month petition finding, Not warranted.	71 FR 66292–66298
11/14/2006	90-Day Finding for a Petition To List the Kennebec River Population of Anadromous Atlantic Salmon as Part of the Endangered Gulf of Maine Distinct Population Segment.	Notice of 90-day petition finding, Substantial.	71 FR 66298–66301
11/21/2006	90-Day Finding on a Petition To List the Columbian Sharp-Tailed Grouse as Threatened or Endangered.	Notice of 90-day petition finding, Not substantial.	71 FR 67318–67325
12/5/2006	90-Day Finding on a Petition To List the Tricolored Blackbird as Threatened or Endangered.	Notice of 90-day petition finding, Not substantial.	71 FR 70483–70492
12/6/2006	12-Month Finding on a Petition To List the Cerulean Warbler (*Dendroica cerulea*) as Threatened with Critical Habitat.	Notice of 12-month petition finding, Not warranted.	71 FR 70717–70733
12/6/2006	90-Day Finding on a Petition To List the Upper Tidal Potomac River Population of the Northern Water Snake (*Nerodia sipedon*) as an Endangered Distinct Population Segment.	Notice of 90-day petition finding, Not substantial.	71 FR 70715–70717
12/14/2006	90-Day Finding on a Petition To Remove the Uinta Basin Hookless Cactus From the List of Endangered and Threatened Plants; 90-Day Finding on a Petition To List the Pariette Cactus as Threatened or Endangered.	Notice of 5-year review, Initiation. Notice of 90-day petition finding, Not substantial. Notice of 90-day petition finding, Substantial.	71 FR 75215–75220
12/19/2006	Withdrawal of Proposed Rule To List *Penstemon grahamii* (Graham's beardtongue) as Threatened With Critical Habitat.	Notice of withdrawal, More abundant than believed, or diminished threats.	71 FR 76023–76035
12/19/2006	90-Day Finding on Petitions To List the Mono Basin Area Population of the Greater Sage-Grouse as Threatened or Endangered.	Notice of 90-day petition finding, Not substantial.	71 FR 76057–76079
1/9/2007	12-Month petition finding and Proposed Rule To List the Polar Bear (*Ursus maritimus*) as Threatened Throughout Its Range; Proposed Rule.	Notice of 12-month petition finding, Warranted. Proposed Listing, Threatened ..	72 FR 1063–1099

FY 2007 COMPLETED LISTING ACTIONS—Continued

Publication date	Title	Actions	FR pages
1/10/2007	Endangered and Threatened Wildlife and Plants; Clarification of Significant Portion of the Range for the Contiguous United States Distinct Population Segment of the Canada Lynx.	Clarification of findings	72 FR 1186–1189
1/12/2007	Withdrawal of Proposed Rule To List *Lepidium papilliferum* (Slickspot Peppergrass).	Notice of withdrawal, More abundant than believed, or diminished threats.	72 FR 1621–1644
2/2/2007	12-Month Finding on a Petition To List the American Eel as Threatened or Endangered.	Notice of 12-month petition finding, Not warranted.	72 FR 4967–4997
2/13/2007	90-Day Finding on a Petition To List the Jollyville Plateau Salamander as Endangered.	Notice of 90-day petition finding, Substantial.	72 FR 6699–6703
2/13/2007	90-Day Finding on a Petition To List the San Felipe Gambusia as Threatened or Endangered.	Notice of 90-day petition finding, Not substantial.	72 FR 6703–6707
2/14/2007	90-Day Finding on a Petition To List *Astragalus debequaeus* (DeBeque milkvetch) as Threatened or Endangered.	Notice of 90-day petition finding, Not substantial.	72 FR 6998–7005
2/21/2007	90-Day Finding on a Petition To Reclassify the Utah Prairie Dog From Threatened to Endangered and Initiation of a 5-Year Review.	Notice of 5-year review, Initiation. Notice of 90-day petition finding, Not substantial.	72 FR 7843–7852
3/8/2007	90-Day Finding on a Petition To List the Monongahela River Basin Population of the Longnose Sucker as Endangered.	Notice of 90-day petition finding, Not substantial.	72 FR 10477–10480
03/29/2007	90-Day Finding on a Petition To List the Siskiyou Mountains Salamander and Scott Bar Salamander as Threatened or Endangered.	Notice of 90-day petition finding, Substantial.	72 FR 14750–14759
04/24/2007	Revised 12-Month Finding for Upper Missouri River Distinct Population Segment of Fluvial Arctic Grayling.	Notice of 12-month petition finding, Not warranted.	72 FR 20305–20314
05/02/2007	12-Month Finding on a Petition To List the Sand Mountain Blue Butterfly (*Euphilotes pallescens* ssp. *arenamontana*) as Threatened or Endangered with Critical Habitat.	Notice of 12-month petition finding, Not warranted.	72 FR 24253–24263
05/22/2007	Status of the Rio Grande Cutthroat Trout	Notice of Review	72 FR 28864–28665
05/30/2007	90-Day Finding on a Petition To List the Mt. Charleston Blue Butterfly as Threatened or Endangered.	Notice of 90-day petition finding, Substantial.	72 FR 29933–29941
06/05/2007	12-Month Finding on a Petition To List the Wolverine as Threatened or Endangered.	Notice of Review	72 FR 31048–31049
06/06/2007	90-Day Finding on a Petition To List the Yellow-Billed Loon as Threatened or Endangered.	Notice of 90-day petition finding, Substantial.	72 FR 31256–31264
06/13/2007	12-Month Finding for a Petition To List the Colorado River Cutthroat Trout as Threatened or Endangered.	Notice of 12-month petition finding, Not warranted.	72 FR 32589–32605
06/25/2007	12-Month Finding on a Petition To List the Sierra Nevada Distinct Population Segment of the Mountain Yellow-Legged Frog (*Rana muscosa*).	Notice of amended 12-month petition finding, Warranted but precluded.	72 FR 34657–34661
07/05/2007	12-Month Finding on a Petition To List the Casey's June Beetle (*Dinacoma caseyi*) as Endangered With Critical Habitat.	Notice of 12-month petition finding, Warranted but precluded.	72 FR 36635–36646
08/15/2007	90-Day Finding on a Petition To List the Yellowstone National Park Bison Herd as Endangered.	Notice of 90-day petition finding, Not substantial.	72 FR 45717–45722
08/16/2007	90-Day Finding on a Petition To List *Astragalus anserinus* (Goose Creek milk-vetch) as Threatened or Endangered.	Notice of 90-day petition finding, Substantial.	72 FR 46023–46030
8/28/2007	12-Month Finding on a Petition To List the Gunnison's Prairie Dog as Threatened or Endangered.	Notice of Review	72 FR 49245–49246
9/11/2007	90-Day Finding on a Petition To List Kenk's Amphipod, Virginia Well Amphipod, and the Copepod *Acanthocyclops columbiensis* as Endangered.	Notice of 90-day petition finding, Not substantial.	72 FR 51766–51770
9/18/2007	12-month Finding on a Petition To List *Sclerocactus brevispinus* (Pariette cactus) as an Endangered or Threatened Species; Taxonomic Change From *Sclerocactus glaucus* to *Sclerocactus brevispinus, S. glaucus*, and *S. wetlandicus*.	Notice of 12-month petition finding for uplisting, Warranted but precluded.	72 FR 53211–53222

In FY 2007, we provided funds to work on proposed listing determinations for the following high-priority species: 3 southeastern aquatic species (Georgia pigtoe, interrupted rocksnail, and rough hornsnail), 2 Oahu plants (*Doryopteris takeuchii, Melicope hiiakae*), 31 Kauai species (Kauai creeper, *Drosophila attigua, Astelia waialealae, Canavalia napaliensis, Chamaesyce eleanoriae, Chamaesyce remyi* var. *kauaiensis, Chamaesyce remyi* var. *remyi, Charpentiera densiflora, Cyanea eleeleensis, Cyanea kuhihewa, Cyrtandra oenobarba, Dubautia imbricata* ssp. *imbricata, Dubautia plantaginea* ssp. *magnifolia, Dubautia waialealae, Geranium kauaiense, Keysseria erici, Keysseria helenae, Labordia helleri, Labordia pumila, Lysimachia daphnoides, Melicope degeneri, Melicope paniculata, Melicope puberula, Myrsine mezii, Pittosporum napaliense, Platydesma rostrata, Pritchardia hardyi, Psychotria grandiflora, Psychotria hobdyi, Schiedea attenuata, Stenogyne kealiae*), 4 Hawaiian damselflies (*Megalagrion nesiotes, Megalagrion leptodemas, Megalagrion oceanicum, Megalagrion*

pacificum), and one Hawaiian plant (*Phyllostegia hispida (no common name)*). In FY 2008, we are continuing to work on these listing proposals (we are now including an additional 17 species in the Kauai species proposed listing determination package). In addition, we are continuing to work on several other determinations listed below, which we funded in FY 2007 and are scheduled to complete in FY 2008.

ACTIONS FUNDED IN FY 2007 THAT HAVE YET TO BE COMPLETED

Species	Action
Actions Subject to Court Order/Settlement Agreement	
Wolverine	12-month petition finding (remand).
Western sage grouse	90-day petition finding (remand).
Rio Grande cutthroat trout	Candidate assessment (remand).
Actions with Statutory Deadlines	
Polar bear	Final listing determination.
Ozark chinquapin	90-day petition finding.
Tucson shovel-nosed snake	90-day petition finding.
Gopher tortoise—Florida population	90-day petition finding.
Sacramento valley tiger beetle	90-day petition finding.
Eagle lake trout	90-day petition finding.
Smooth billed ani	90-day petition finding.
Mojave ground squirrel	90-day petition finding.
Gopher Tortoise—eastern population	90-day petition finding.
Bay Springs salamander	90-day petition finding.
Tehachapi slender salamander	90-day petition finding.
Coaster brook trout	90-day petition finding.
Mojave fringe-toed lizard	90-day petition finding.
Evening primrose	90-day petition finding.
Palm Springs pocket mouse	90-day petition finding.
Northern leopard frog	90-day petition finding.
Shrike, Island loggerhead	90-day petition finding.
Cactus ferruginous pygmy owl	90-day petition finding.

Our expeditious progress so far in FY 2008 in the Listing Program, includes preparing and publishing the following:

FY 2008 COMPLETED LISTING ACTIONS

Publication date	Title	Actions	FR Pages
10/09/2007	90-Day Finding on a Petition to List the Black-Footed Albatross (*Phoebastria nigripes*) as Threatened or Endangered.	Notice of 90-day Petition Finding, Substantial.	72 FR 57278–57283
10/09/2007	90-Day Finding on a Petition To List the Giant Palouse Earthworm as Threatened or Endangered.	Notice of 90-day Petition Finding, Not substantial.	72 FR 57273–57276
10/23/2007	90-Day Finding on a Petition To List the Mountain Whitefish (*Prosopium williamsoni*) in the Big Lost River, ID, as Threatened or Endangered.	Notice of 90-day Petition Finding, Not substantial.	72 FR 59983–59989
10/23/2007	90-Day Finding on a Petition To List the Summer-Run Kokanee Population in Issaquah Creek, WA, as Threatened or Endangered.	Notice of 90-day Petition Finding, Not substantial.	72 FR 59979–59983
11/08/2007	Response to Court on Significant Portion of the Range, and Evaluation of Distinct Population Segments, for the Queen Charlotte Goshawk.	Response to Court	72 FR 63123–63140
12/13/07	12-Month Finding on a Petition To List the Jollyville Plateau salamander (*Eurycea tonkawae*) as Endangered With Critical Habitat.	Notice of 12-month Petition Finding, Warranted but Precluded.	72 FR 71039–71054
1/08/08	90-Day Finding on a Petition To List the Pygmy Rabbit (*Brachylagus idahoensis*) as Threatened or Endangered.	Notice of 90-day Petition Finding, Substantial.	73 FR 1312–1313
1/24/2008	12-Month Finding on a Petition To List the Siskiyou Mountains Salamander (*Plethodon stormi*) and Scott Bar Salamander (*Plethodon asupak*) as Threatened or Endangered.	Notice of 12-month Petition Finding, Not Warranted.	73 FR 4379–4418

Our expeditious progress also includes work on listing actions, which we are funding in FY 2008. These actions are listed below. We are conducting work on those actions in the top section of the table under a deadline set by a court. Actions in the middle section of the table are being conducted to meet statutory timelines, that is, timelines required under the Act. Actions in the bottom section of the table are high priority listing actions, which include at least one or more species with an LPN of 2, available staff resources, and when appropriate,

species with a lower priority if they overlap geographically or have the same threats as the species with the high priority.

ACTIONS ANTICIPATED TO BE FUNDED IN FY 2008 THAT HAVE YET TO BE COMPLETED

Species	Action
Actions Subject to Court Order/Settlement Agreement	
Bonneville cutthroat trout	12-month petition finding (remand).
Actions With Statutory Deadlines	
Polar bear	Final listing determination.
3 Southeastern aquatic species	Final listing.
Phyllostegia hispida	Final listing.
Yellow-billed loon	12-month petition finding.
Black-footed albatross	12-month petition finding.
Mount Charleston blue butterfly	12-month petition finding.
Goose Creek milk-vetch	12-month petition finding.
White-tailed prairie dog	12-month petition finding.
Mono Basin sage grouse (vol. remand)	90-day petition finding.
Ashy storm petrel	90-day petition finding.
Longfin smelt—San Fran. Bay population	90-day petition finding.
Black-tailed prairie dog	90-day petition finding.
Lynx (include New Mexico in listing)	90-day petition finding.
Wyoming pocket gopher	90-day petition finding.
Llanero coqui	90-day petition finding.
Least chub	90-day petition finding.
American pika	90-day petition finding.
Dusky tree vole	90-day petition finding.
Sacramento Mts. checkerspot butterfly	90-day petition finding.
Kokanee—Lake Sammamish population	90-day petition finding.
206 species	90-day petition finding.
475 Southwestern species	90-day petition finding.
High Priority Listing Actions	
31 Kauai species [1]	Proposed listing.
8 packages of high-priority candidate species	Proposed listing.

[1] Funds used for this listing action were also provided in FY 2007.

We have endeavored to make our listing actions as efficient and timely as possible, given the requirements of the relevant law and regulations, and constraints relating to workload and personnel. We are continually considering ways to streamline processes or achieve economies of scale, such as by batching related actions together. Given our limited budget for implementing section 4 of the Act, these actions described above collectively constitute expeditious progress.

Conclusion

We will add the montane portion of the Gunnison's prairie dog to the list of candidate species. We intend any listing action for the species to be as accurate as possible by reflecting the best available information. Therefore, we will continue to accept additional information and comments on the status of and threats to this species from all concerned governmental agencies, the scientific community, industry, or any other interested party concerning this finding. If an emergency situation develops that warrants an emergency listing of this species, we will act immediately to provide additional protection.

References

A complete list of all references cited herein is available upon request from the Western Colorado Field Office (see **ADDRESSES**).

Author

The primary authors of this document are staff located at the Colorado Field Office (see **ADDRESSES**).

Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: January 29, 2008.

H. Dale Hall,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 08–493 Filed 2–4–08; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[FWS–R8–ES–2008–0014; 92210–1117–0000–B4]

RIN 1018–AV05

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Sierra Nevada Bighorn Sheep (Ovis canadensis californiana) and Proposed Taxonomic Revision

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; reopening of comment period, notice of availability of draft economic analysis, and amended required determinations.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce the reopening of the public comment period on the proposed designation of critical habitat for the Sierra Nevada bighorn sheep (*Ovis canadensis californiana*) and proposed taxonomic revision under