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I. INTRODUCTION

Defenders of Wildlife hereby petitions the U. S. Fish and Wildlife Service to list a distinct population segment of gray wolves as endangered under the Endangered Species Act (ESA) (16 U.S.C. § 1533) and the Administrative Procedure Act (5 U.S.C. § 553). The DPS is defined in Section III but generally represents the Southern Rocky Mountains.

The gray wolf in the southern Rockies is currently classified as “endangered” under the ESA. The FWS, however has proposed to downlist the species to “threatened” and to forgo an affirmative recovery effort in this region, 65 Fed. Reg. 43450 - 43496 (July 13, 2000).

In this petition we will present documentation of vast areas of suitable habitat and favorable conditions for the establishment of viable populations of wolves in the southern Rockies. We present several factors that establish the significance and discreteness of this population to the conservation of gray wolves in the lower 48. First, feasibility studies indicate that Colorado (in the Southern Rocky Mountain Ecoregion) alone could sustain a population of over 1100 wolves. Second, the absence of a gray wolf population in the southern Rocky Mountain region constitutes a “significant gap within the historical range” of the gray wolf. This area includes over 30 million acres of federally controlled lands with substantial amounts of potential wolf habitat available. Finally we will show that the Southern Rocky Mountain population qualifies as an “endangered” species under the ESA. We believe that the FWS is legally obligated to establish this new DPS and expeditiously complete and implement a recovery plan that addresses the entire geographic area encompassed by the proposed DPS.

A. The Petitioners

Defenders of Wildlife (Defenders) is a non-profit, science-based, conservation organization with over 430,000 members and an extensive involvement in wolf restoration and protection in North America. For over 30 years Defenders has been directly involved in making gray wolf recovery a reality in the lower 48 states. Our activities in this arena include:

- < lobbying Congress and various administrations for wolf recovery actions and funding;
- < litigating on behalf of wolves as well as intervening on behalf of the government to protect the Yellowstone and Mexican gray wolf recovery efforts;
- < operating a privately funded wolf compensation trust in the northern Rockies and elsewhere since 1987;
- < offering and paying rewards for information leading to the conviction of illegal wolf killers;
- < working with current and potential cooperating tribes often providing technical training and funding for equipment or personnel;
- < funding and training field staff to manage and protect wolves in recovery areas;

- < sponsoring educational symposia and activities such as the annual North American Interagency Wolf Conference and Wolf Awareness Week to educate and organize wolf supporters and others;
- < financing and participating in numerous scientific studies to gauge habitat suitability and public support for wolf recovery, documenting wolf-related ecological phenomenon, and testing the efficacy of many management approaches and techniques;
- < providing emergency funding and staff during the government shutdown of 1996 to complete the second Yellowstone reintroduction; and
- < providing support for captive breeding facilities.

In December 1999 Defenders of Wildlife published *Places for Wolves: A Blueprint for Restoration and Long-term Recovery in the Lower 48 States* (Ferris et al. 1999) as our formal and detailed response to early drafts of the FWS reclassification proposal. This document, which was recently recognized as the Natural Resource Council of America's 1999 conservation publication of the year, lays out our science-based vision for what federally-led wolf recovery should entail.

That publication identifies several areas that offer great opportunities for wolf recovery, and chief among these is the Southern Rocky Mountain region. To help enable wolf recovery in this area, Defenders of Wildlife has agreed to extend our wolf compensation trust to cover the Southern Rockies region until wolves no longer require federal protection. We have also worked with a number of groups including the Colorado-based group Sinapu and the Turner Endangered Species Fund to conduct a population and habitat viability analyses for the region (Phillips et al. 2000) and the Wildlands Project and others to complete a feasibility study for the Grand Canyon Rim and the Kaibab Plateau (Sneed 2000). And last, we've launched a public education and outreach program that includes traveling education booths, a wolf curriculum and a regular international predator conference.

B. Current Legal Status

Under provisions of the Endangered Species Act, 43 Fed. Reg. 9607-9615 (March 9, 1978), all gray wolves south of the United States-Canada border (including Mexico) are listed as endangered, except in Minnesota where they are listed as threatened and in the three non-essential and experimental areas of Yellowstone, central Idaho and Arizona. The FWS has proposed a reclassification of gray wolves under the ESA that would establish 4 distinct population segments (DPS) covering all or parts of 19 states and Mexico. These proposed DPS's are: Western Gray Wolf DPS (threatened status, WA, OR, ID, MT, WY, UT, CO, northern NM, northern AZ); Southwestern Gray Wolf DPS (endangered status, southern AZ, southern NM, west TX, Mexico); Western Great Lakes Gray Wolf DPS (threatened status, ND, SD, MN, WI, MI); and Northeastern Gray Wolf DPS (threatened status, NY, VT, NH, ME). Gray wolves would lose ESA protection (i.e. be delisted) in 29 states if this rule were promulgated as proposed. Additionally, gray wolves could be delisted (with no or non-viable populations) in Oregon, Washington,

Utah, Colorado, northern Arizona, and northern New Mexico once delisting recovery goals established in the *Northern Rocky Mountain Wolf Recovery Plan* (1987) are met. Recovery goals for the proposed Western DPS are expected to be attained soon and a delisting proposal for that area is expected within 3-5 years. Under the proposed rule gray wolves could lose ESA protections when populations are reestablished in portions of no more than 12 of the 48 conterminous states.

C. DPS and ESA Criteria

Under the FWS DPS policy, 61 Fed. Reg. 4722-25 (Feb. 7, 1996), three elements are considered in a decision whether to list a DPS as threatened or endangered under the ESA. First the population must be discrete based on one of the following criteria: (1) the population is markedly separated from other populations of the same taxon, or (2) it is delimited by international governmental boundaries. Second, a population's significance can be established based on one of the following factors: (1) persistence of the DPS in an ecological setting unusual or unique for the taxon, (2) evidence that loss of the DPS would result in a significant gap in the range of the taxon, (3) evidence that the DPS represents the only surviving natural occurrence of a taxon within its historic range, or (4) evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics. Lastly, if a population is determined to be both discrete and significant and therefore a "species" under the ESA, its status as endangered or threatened is then evaluated. The standard for listing species under the ESA is fairly straight forward, 16 U.S.C. § 1533 (a)(1); 50 C.F.R. § 424.11. The ESA requires the Secretary to determine, "solely on the basis of the best scientific and commercial data available..." whether a species is endangered or threatened based on any one or a combination of five factors: 1- the present or threatened destruction, modification, or curtailment of its habitat or range; 2 - overutilization for commercial, recreational, scientific, or educational purposes; 3 - disease or predation; 4 - the inadequacy of existing regulatory mechanisms; and 5 - other natural or manmade factors affecting its continued existence..

D. Overview and Current Issues

Although Defenders supports downlisting the wolf in accordance with the 1987 *Northern Rocky Mountain Wolf Recovery Plan* goals, our support is only for those areas for which the plan was developed, i.e. the northern Rocky Mountains (western Montana, central Idaho and northwest Wyoming). We cannot support the downlisting of the entire Western DPS as described in the FWS proposed rule. The proposed Western DPS includes regions for which no recovery plans have been developed even though significant amounts of potential wolf habitat are available. One such region is the southern Rocky Mountains which includes southern Wyoming, Colorado, Utah, northern Arizona and northern New Mexico (see Section III.).

The FWS's proposed Western DPS adds six additional states to the current Northern Rocky

Mountain recovery zone – to include a total of nine states – without expanding recovery goals that were initially set for only three states. Thus, when the current northern Rockies populations reach their recovery goal of ten pairs in each population, breeding successfully for three years, the FWS plans to delist throughout the entire Western DPS including the Southern Rockies. This could happen as early as 2003, at which time all federal protection would be lost for gray wolves in the western U.S., (except those located in the Southwestern DPS), and without a single wolf present anywhere in the southern Rockies.

Delisting of the Western DPS would leave a straight-line distance of 600-700 miles between restored populations in the northern Rocky Mountains and the Southwest, an area whose breadth is 12-15 times the average dispersal distance for gray wolves (Gese and Mech 1991, $\bar{x}$ = 48 mi., n = 316) and greater than the longest recorded dispersal for the species (Fritts 1983). Gray wolves are unlikely to recolonize the southern Rockies on their own because of the substantial distances (greater than 100 miles) and anthropogenic barriers (highways, farmland, development) between this area and wolf populations in the Northern Rockies and the Southwest.

Delisting will remove federal protection for gray wolves and give responsibility for their continued protection to the states. State management of wildlife has traditionally focused on game species such as deer and elk, as well as cougars, black bears and bobcats, that are subject to hunting regulations. Other species, such as coyotes, have no protection and can be killed in unlimited numbers. It will be up to the governor-appointed game commissions in each state to determine the level of "management" given to wolf populations in that state. If states follow the lead of South Dakota, which recently repealed hunting restrictions on wolves (S.D. Laws 1999, ch. 209, sec.1), protection could be non-existent. Many of these western states have also shown an inability or an unwillingness to recover or protect wolves within their boundaries. Other states retain legal bounties on gray wolves. In Colorado, for example, a state law offering a \$2 bounty for each wolf killed remains on the books, despite threats of a lawsuit over the law (Co. Rev. Stat. sec. 35-40-107). Montana law also provides a bounty of up to \$100 for each wolf killed; \$20 for each wolf pup (Mont. Stat. sec. 81-7-202). Most states have failed to demonstrate either their willingness or capability to protect wolves.

Little can be done to significantly increase the amount of suitable habitat available for wolf recovery. Consequently, we must make the most use of what habitat is left and adhere to the three R's of conservation biology (representation, resiliency, and redundancy) and thereby maximizing the species chances for long-term survival (Shaffer and Stein 2000). Representation refers to establishing populations across the full array of appropriate potential habitats. Resiliency refers to maintaining populations in each habitat at levels large enough to survive any negative consequences of demographic stochasticity and inbreeding. Redundancy refers to

providing several populations in each habitat type as a hedge against extreme environmental events (Shaffer and Stein 2000). Wolf populations should be established based on these principles in order to maximize the long-term viability of the gray wolf in the lower 48 states. In practice, the above would call for a minimum of two (most likely three or more) populations of not less than several hundred wolves each, in the Southern Rocky Mountains.

With these conditions in mind we feel that the only solution for recovery of a viable long-term population of gray wolves is through continued federal oversight and the establishment of a Southern Rocky Mountain DPS. The conditions existing under the FWS proposal to register a Northeastern DPS are strikingly similar to those found within the Southern Rocky Mountains, and as such the Southern Rockies also deserves equal consideration. The FWS should develop a comprehensive recovery plan for this region and follow it up with whatever steps are deemed necessary to encourage the restoration of this species. Defenders is willing to continue to support the FWS in this process and will continue our long tradition of wolf education and advocacy as well as payment of livestock depredation claims arising from wolves.

II. NATURAL HISTORY

A. Description of the Species

Physical description.--Gray wolves (*Canis lupus*) are the largest member of the dog family *Canidae* (Mech 1970) and resemble some large breeds of domestic dogs, such as Alaskan malamutes and German shepherds. Females average weight ranges from 80 - 85 lbs. and males average from 95 - 100 lbs. (Mech 1970), though considerable clinal variation in size and pelt color exists from the Arctic to central Mexico (Young and Goldman 1944). The heaviest recorded wolf was a 175 pound male from east-central Alaska, though males seldom exceed 120 lbs. and females are seldom over 100 lbs. (Mech 1970). Winter pelage of wolves that historically inhabited the SRM region is described by Young and Goldman (1944) as follows: upper parts are generally a mixture of white and buff overlaid with black tending to produce a grayish appearance; the face and head are covered with shorter, "grizzled" fur of black and white coloration; underparts vary from white to "pale pinkish buff"; outer sides of limbs and feet are pale pinkish buff grading to whitish on the inner sides; ears are pale pinkish buff to cinnamon buff and usually edged with black; and the tail is white and buff overlaid with black (with more black over the tail gland) above, becoming pure white or buff below, and black all around (with a few white hairs) at the tip.

Wolves' acute hearing and exceptional sense of smell - up to 100 times more sensitive than that of humans - make them well-adapted to their surroundings and to finding food (Mech 1970). Some researchers estimate that a wolf can run as fast as 40 miles an hour. Wolves have been known to travel 120 miles in a day, but they usually travel an average of 10 to 15 miles a day (Mech 1970).

Pack Behavior.--Wolves live, travel, and hunt in packs averaging four to seven animals, consisting of an alpha, or dominant pair, their pups, and several other subordinate or young animals. The alpha female and male are the pack leaders, tracking and hunting prey, choosing den sites, and establishing the pack's territory (Mech 1970). Wolves prey mainly on ungulates, such as deer, elk, moose, caribou, bison, bighorn sheep and muskoxen. They also eat smaller prey such as snowshoe hare, beaver, rabbits, opossums and rodents. Wolves also prey on livestock, although wild prey are their preferred food (Mech 1970).

Wolf pups romp and play fight with each other from a very young age. Scientists think that even these early encounters establish hierarchies that will help determine which members of the litter will grow up to be pack leaders. All adults share parental responsibilities for the pups. They feed the pups by regurgitating food for them from the time the pups are about four weeks old until they learn to hunt with the pack. Pups remain with their parents for at least their first year, while they learn to hunt. During their second year of life, when the parents are raising a new set of pups, young wolves can remain with the pack, or spend periods of time on their own. Frequently, they return in autumn to spend their second winter with the pack (Mech 1970).

By the time wolves are two years old, however, they leave the pack permanently to find mates and territories of their own. Not all the pups in a litter live to the age of dispersal, of course. Biologists have determined that only one or two of every five pups born live to the age of 10 months, and only about half of those remaining survive to the time when they would leave the pack and find their own mates. Adult wolves, on the other hand, have fairly high rates of survival. A seven year old wolf is considered to be pretty old, and a maximum lifespan is about 16 years (Young and Goldman 1944).

Reproduction.--The alpha pair mate in January or February and give birth in spring, after a gestation period of about 65 days. Litters can contain from one to nine pups, but usually consist of around six. Pups have blue eyes at birth and weigh about one pound. Their eyes open when they are about two weeks old, and a week later begin to walk and explore the area around the den. Wolf pups grow rapidly, reaching 20 pounds at two months. A wolf pup is the same size as an adult by the time he or she is about a year old, and reaches reproductive maturity by about two years of age (Mech 1970).

Communication.--Wolves communicate through facial expressions and body postures, scent-marking, growls, barks, whimpers and howls. Howling can mean many things: a greeting, a rallying cry to gather the pack together or to get ready for a hunt, an advertisement of their presence to warn other wolves away from their territory, spontaneous play or bonding. Pups begin to howl at one month old. The howl of the wolf can be heard for up to six miles. When wolves in a pack communicate with each other, they use their entire bodies: expressions of the eyes and mouth, set of the ears, tail, head, and hackles, and general body posture combine to express excitement, anxiety, aggression, or acquiescence.

Wolves wrestle, rub cheeks and noses, nip, nuzzle, and lick each other. They also leave

"messages" for themselves and each other by urinating, defecating, or scratching the ground to leave scent marks. These marks can set the boundaries of territories, record trails, warn off other wolves, or help lone wolves find unoccupied territory. No one knows how wolves get all this information from smelling scent marks, but it is likely that wolves are very good at distinguishing between many similar odors.

B. Taxonomy

According to Young and Goldman (1944) and Hall (1981) the SRM region was historically occupied by *C. l. youngi*, which Goldman referred to as the "Southern Rocky Mountain Wolf." Nowak (1995) presented a significant revision to gray wolf taxonomy which reduced the 24 formerly recognized subspecies in North America (Hall 1981) to 5 currently recognized subspecies. According to Nowak's (1995) revised classification, the gray wolf subspecies that formerly occupied the SRM region was *C. l. nubilus*. This subspecies currently exists in the wild in northern Minnesota, northern Michigan, and northern Wisconsin (USA) and Ontario, northeastern Manitoba, and northern Quebec (Canada). Other extant subspecies near the SRM region are *C. l. occidentalis* in northwestern Montana (naturally occurring), central Idaho (re-introduced from Canada), and northwestern Wyoming (re-introduced from Canada) and *C. l. baileyi* in southeastern Arizona and southwestern New Mexico (re-introduced from captive stock with 6 of 7 founders originating in Mexico). A captive population of 203 individuals of *C. l. baileyi* exists in 45 captive facilities throughout the United States and Mexico (Siminski 2000).

Confusion and disagreement exists over North American gray wolf taxonomy (Brewster and Fritts 1995). However, most gray wolf taxonomists agree that the boundaries between ranges of adjacent gray wolf subspecies were zones of intergradation where genetic mixing between subspecies occurred, rather than distinct lines on a map (Young and Goldman 1944; Mech 1970; Brewster and Fritts 1995). The width of these zones relate to the ability of wolves to disperse. Wolves are capable of dispersing hundreds of kilometers, with the longest known dispersal exceeding 885 km (Fritts 1983). Gese and Mech (1991) found that the mean dispersal distance for 316 dispersing gray wolves was 77 km, with a range of 8-354 km. Thus for gray wolves, zones of intergradation were likely hundreds of kilometers wide. The narrow zone where the gray wolf population genome was represented by approximately equal contributions from adjacent subspecies (the putative subspecies boundary) would be impossible to delineate without very large samples of DNA material, which do not exist.

Because of the fluid nature of gray wolf taxonomy and its desire to afford protection to all gray wolves south of the U.S.-Canada border, the FWS listed all gray wolves as threatened (Minnesota) or endangered (remaining 47 states and Mexico) at the species (*Canis lupus*) level in 1978, 43 Fed. Reg. 9607-9615 (March 9, 1978). In its most recent proposal to reclassify gray wolves by distinct population segments, the FWS states: "We recognize that gray wolf taxonomy at the subspecies level is subject to conflicting opinions and continuing modification. For this reason, we will not base our gray wolf recovery efforts on any

particular portrayal of gray wolf subspeciation. Instead we have identified geographic areas where wolf recovery is occurring or is feasible, and we will focus recovery efforts on those geographic entities, regardless of the subspecific affiliation of current or historical gray wolves in those areas,” 65 Fed. Reg. 43451-43452 (July 13, 2000).

Recently, a group of independent and agency experts met to review the feasibility of gray wolf restoration in the SRM region (Phillips et al. 2000). The working group on biological issues addressed the question of which sources of gray wolf stock would be most appropriate for reintroduction efforts in the SRM region. After carefully considering taxonomy, genetics, geographic distances, ecological factors, and conservation value, they determined that the most appropriate source for reintroductions within the southern portions of the Southern Rocky Mountain region would be the Mexican wolf (*C. l. baileyi*), and the most appropriate source stock for the northern portions of the SRM region would be the northern Rocky Mountains wolf (*C. l. occidentalis*). This approach would restore a zone of genetic intergradation between northern and southern forms of the gray wolf similar to that which occurred ancestrally in this region. Furthermore, this approach is consistent with the FWS’s philosophy regarding subspeciation relative to gray wolf recovery (Phillips et al. 2000).

C. Historical Distribution in the Southern Rocky Mountains Eco-Region

According to Young and Goldman (1944) and Hall (1981) the SRM eco-region was historically occupied by *Canis lupus youngi*, which Goldman referred to as the "Southern Rocky Mountain wolf." Young and Goldman (1944) described this subspecies as being "formerly numerous" in the Rocky Mountain regions of Utah, southern Wyoming, Colorado, northern New Mexico, and northern Arizona. Bennett (1994:45) reviewed historical accounts of wolves in the region and concluded that wolves in Colorado were “numerous” prior to European settlement.

In New Mexico and Arizona the species was thought to be widespread and common, with the Mexican subspecies occurring in the southernmost sections of the states (Young and Goldman 1944, Brown 1984, BISON-M 2000a, b). Resident populations were extirpated in both states by the 1940s, though occasional transients from Mexico were documented until 1970. A summary of a New Mexico - Arizona database BISON-M, (2000a, b) identifies numerous publications and reports of wolf occurrences or documentation of historical record over the years. In Sneed’s progress report (2000) on the feasibility of restoring wolves to the Grand Canyon Eco-region, (including portions of Utah, northern Arizona and some of New Mexico) he reports that the last remaining wolves were most likely eliminated in the 1920s or 1930s (Brown 1984, Rasmussen 1941 cited in Sneed 2000, and Russo 1964 cited in Sneed 2000).

Deliberate eradication programs for the primary purpose of protecting livestock nearly eliminated gray wolves from the lower 48 United States by the mid 1900s (Young and Goldman 1944, Mech 1970, Brown 1984). By 1960, only a few hundred gray wolves remained, and these were restricted to northeastern Minnesota and Isle Royale National Park in Lake Superior (Thiel and Ream 1995). Gray wolves are considered extirpated

from the SRM region (Southern Rockies Ecosystem Project 2000).

III. SOUTHERN ROCKY MOUNTAIN GRAY WOLF DPS PETITION PROPOSAL

A. Description

The Southern Rocky Mountains Gray Wolf DPS should include those portions of Arizona and New Mexico north of the proposed Southwestern (Mexican) Gray Wolf DPS, all of Utah and Colorado, and that portion of Wyoming south of Interstate Highway 80. This DPS would encompass all or portions of 19 National Forests (25.3 million acres), including 4.5 million acres of designated wilderness. It also includes 21 National Parks/Monuments/Recreation areas with about 5.4 million acres. All totaled, this DPS includes 30.7 million acres of federally managed lands (Appendix 1).

The Southern Rockies Ecoregion is comprised of the mountainous regions of western Colorado, southern Wyoming, eastern Utah, and northern New Mexico and Arizona. Elevation of the area varies to 4,300 feet above sea level to 14,433 feet, with an average elevation of 9,670. In addition to the mountainous topography for which the region is named, it also encompasses foothills, plains, plateaus, basins, river valleys and remnant volcanic features. Precipitation varies greatly across the region, from 7 to 45 inches annually, and temperature regime also varies significantly with elevation (Conservation Breeding Specialist Group 2000).

Four ecosystem types dominate the region: semi-desert and sagebrush shrublands (15.3%), pinon-juniper woodland (12.7%), Engelmann spruce- subalpine fir forest (12.0%), and ponderosa pine forest (11%). The remaining natural areas are dominated by a variety of conifer forest types, grasslands, shrublands, and alpine tundra. Cropland and human settlement currently comprise 5.1% of land use, but these uses are expanding, particularly in light of sprawl in urban areas. 9% of the ecoregion was located within one mile of development in 1990, and this figure is projected to climb to 13% by 2020 (Conservation Breeding Specialist Group 2000).

Of the 41.6 million acres in the ecoregion, 37.6% is privately owned, 3.5% is state lands, and 54% is federally owned. Livestock grazing occurs on 70-80% of public lands, and logging, which has historically occurred over much of the region's forested areas, is currently a predominant land use in only the Medicine Bow/Routt and Rio Grande/San Juan National Forests (Conservation Breeding Specialist Group 2000).

Suitability of the SRM Region for Gray Wolf Restoration.--Bennett (1994) analyzed habitat characteristics believed to be favorable for wolves in seven national forests and adjacent areas in the Rocky Mountain region of Colorado. Characteristics used to rank the suitability of potential wolf recovery areas included land area in public ownership, combined biomass of mule deer and elk, human density, extent of area in

wilderness status, road density, livestock density, recreational use, and extent of area receiving less than 250 inches average annual snowfall. Bennett (1994) concluded that western Colorado contained about 25,000 square miles of potentially suitable wolf recovery areas capable of supporting an estimated population of 1128 wolves. He emphasized that these areas should be considered "preliminary potential wolf reintroduction areas" pending additional in-depth studies because of the "limited scope" of his analysis.

Martin et al. (2000) (see also Sinapu 1999) conducted a preliminary wolf suitability analysis for the Colorado portion of the SRM region. Using a Geographic Information System (GIS) they analyzed various factors which contribute to habitat suitability for wolves, including wild ungulate density and distribution, road density, land ownership status, and protected/roadless areas. These factors relate directly to three important habitat considerations for wolves—prey availability, habitat security, and ease of land/species management (Sinapu 1999; Martin et al. 2000). Values for these habitat factors were combined to produce a composite score and then mapped. Composite scores ranged from 0 to 70 points. Areas with a composite score of 41-70 points comprise nearly 21,000 square miles or about 30% of the SRM region within Colorado, with large nodes occurring in southern, central, and northern Colorado. While Martin and his colleagues (Martin et al. 2000) do not establish a point score threshold for wolf habitat suitability or estimate the wolf carrying capacity of the SRM region, the amount of area with relatively high suitability scores (41-70 points) accords with Bennett's (1994) estimate of 25,000 square miles.

Similar evaluations are under way for parts of Wyoming and New Mexico (R. Edwards and A. Jones, personal communications); Arizona (P. Sneed, 2000); and Utah (A. Jones, personal communication) that will likely increase the total area of suitable wolf habitat identified within the Southern Rocky Mountain region.

Human Attitudes.--Manfredo et al. (1994) assessed public attitudes in Colorado and found that a majority of Colorado residents supported the idea of reintroducing gray wolves into the state. However, most respondents indicated that current programs of the Colorado Division of Wildlife (such as hunting, fishing, wildlife education, habitat improvement, and protection of other endangered or threatened species) were more important to them than reintroducing the gray wolf. They found less support for wolf reintroduction among residents of the west slope of the Rocky Mountains compared to east slope residents (the more urbanized portion of Colorado). However, a majority of both groups supported wolf reintroduction.

Summarizing past research on human attitudes toward wolves and wolf reintroduction Manfredo et al. (1994) and Pate et al. (1996) concluded that people are more likely to support wolf reintroduction if they (1) live away from wolves and wolf reintroduction sites, (2) are younger, (3) have higher levels of education, or (4) live in urban areas. Bath and Buchanan (1989) found that most Wyoming residents held a positive attitude toward wolves and supported reintroduction of wolves in Yellowstone National Park. La Vine (1995) found similar trends in Utah as well as the tendency to be fearful and have lower

levels of wolf-related knowledge when compared to Montana residents measured in a similar survey. During the planning for reintroduction of Mexican wolves to southeastern Arizona and southwestern New Mexico, Duda and Young (1995) found that, statewide, about 60% of New Mexico residents supported reintroduction of Mexican wolves. In the 4 primarily rural counties in or near proposed release areas, about 50% of residents polled supported reintroduction, while about 32% opposed it. Biggs (1988) found that 79% of New Mexico residents, statewide, supported Mexican wolf reintroduction into New Mexico. Most statewide and rural Arizona residents supported reintroduction of Mexican wolves into its former forest and mountain habitats in Arizona (Johnson 1990). However, a survey of residents of rural Greenlee County, Arizona (most of which lies within the, then proposed, Mexican wolf reintroduction area) found that 58% of respondents opposed wolf reintroduction while 22% supported it (Schoenecker and Shaw 1997). Livestock-related concerns were the most frequently stated reason for opposition, followed by fears for human safety.

Ecosystem Impacts.— The impacts of wolves in ecosystems have never been comprehensively studied, due to the difficulty of establishing controls and replication (Smith et al. 1999). It has been noted, however, that removal of large predators releases herbivores and mesopredators, causing overgrazing, vegetation recruitment failure, decreases in ground-nesting birds, and in general, ecosystem simplification, extinctions, and decreased biodiversity. (Terbough et al. 1999). Wolf effects on their herbivore prey species, as well as the resultant vegetation response, have been investigated. In three-level trophic cascade systems, wolves are responsible for maintaining vegetation levels; for instance, on Isle Royale in Lake Superior, predation by wolves releases balsam fir (*Abies balsamea*) from predation by moose (McLaren and Peterson 1994). The interruption of these trophic cascade interaction have been speculated in the decline of Aspen (*Populus*) trees in Yellowstone National Park following wolf extirpation in the 1920s. However, is too soon to determine if there has been a vegetation recruitment response since wolf reintroduction (Ripple and Larsen 2000).

Estimates based on population size indicate that wolf presence in the Park will triple available carrion (Garton et al. 1990), with potentially positive effects for a wide range of scavenging species, including foxes, bears, weasels and raptors (Crabtree & Sheldon 1999). Wolves have killed at least 24 coyotes in Yellowstone and altered their behavior and home ranges (Crabtree and Sheldon 1999). Once the ecosystem is released from extreme coyote and ungulate pressure it has been speculated to give a positive impact on numbers of ground squirrels, pocket gophers, hawks, owls, eagles, pronghorn, beaver, wetlands, moose, aspen, willows, and songbirds (Fischer 1998, Wilkinson 1997).

B. Qualifications of the SRM Wolf Population as a DPS

The ESA's definition of the term "species" includes "any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature." On February 7, 1996, the FWS adopted the "Vertebrate Population Policy" governing the recognition of distinct population segments (DPSs) for purposes of listing, reclassifying,

and delisting vertebrate species under the ESA, 16 U.S.C. § 1532 (15). To be recognized as a DPS, a group of vertebrate animals must be both “discrete” and “significant.”

1. Discreteness

As mentioned previously (Section I. C), to meet the discreteness test, the proposed DPS must satisfy one of several criteria, including that vertebrate populations are markedly separated from other populations of the same taxon by physical or ecological factors. The FWS in their recently proposed rule suggests that gaps “possibly broader than the dispersal distance of the species” would be significant gaps in the context of application of the DPS Policy, 65 Fed. Reg. 43473 (July 13, 2000). Gese and Mech (1991) found that the average dispersal distance for 316 gray wolves was about 48 miles.

A population of gray wolves established in the SRM region would be geographically isolated from recently restored populations of gray wolves in northwestern Wyoming, southwestern New Mexico, and southeastern Arizona by 100-200 miles. Using the average dispersal distances of Gese and Mech (48 miles, 1991) this would be equivalent to 2-4 times the average dispersal distance for gray wolves. These distances are not characterized by continuous suitable gray wolf habitat and contain anthropogenic barriers to wolf dispersal. While wolf dispersal across this distance is possible, it is considered highly unlikely at any significant level, and the barriers to wolf dispersal presented by increasing human expansion into previously undeveloped areas are likely to worsen in the future. Certainly, any gray wolf population established in the SRM region would not be contiguous with other established gray wolf populations or any conceivable natural expansion of those populations for the foreseeable future. Thus, a Southern Rocky Mountain DPS would be discrete on the basis of geographic isolation from other gray wolf populations.

2. Significance

As mentioned previously (Section I. C.), to meet the significance test, the listed DPS is evaluated to determine its biological or ecological importance through a scientific evaluation of factors such as persistence of the DPS in an ecological setting unusual or unique for the taxon and evidence that loss of the DPS would result in a significant gap in the range of the taxon. For a thorough description of the Southern Rockies Eco-region refer above to section III a.

According to the FWS’s *Proposal to Reclassify and Remove the Gray Wolf From the List of Endangered and Threatened Wildlife in Portions of the Conterminous United States*, gray wolves in the western United States would lose ESA protection (i.e. delisted) when the goals of current recovery programs within the proposed Western and Southwestern Gray Wolf DPSs are reached. This would leave a gap of 600-700 miles between restored populations in the northern Rocky Mountains and the Southwest. Genetic intergradation between northern and southern forms of gray wolves historically occurred in this region (Young and Goldman 1944, Mech 1970, Brewster and Fritts 1995). This natural,

historical process of genetic exchange along a north-south continuum from the northern Rocky Mountains to the Sierra Madres in Mexico would never be restored under the proposed DPS rule.

The absence of a gray wolf population in the SRM region would constitute a significant gap within the historical range of the gray wolf. This gap of 600-700 miles would be 12-15 times the average dispersal distance for gray wolves (Gese and Mech 1991) and greater than the longest recorded dispersal for the species (Fritts 1983). We believe the fact that such a “significant gap” exists is evidence enough to meet the test of significance under the DPS policy.

3. Conservation Status

There is currently no credible scientific evidence of individual wild wolves or pack activity within the Southern Rockies DPS as defined by this petition. Gray wolves in the Southern Rockies DPS are currently listed as endangered. An analysis of the ESA’s five listing factors and the best available scientific evidence support retaining an endangered classification for the Southern Rockies DPS.

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

The Southern Rockies represent one of our nation’s best opportunities to restore significant wolf numbers and range but availability and utilization of that existing range is jeopardized by a number of factors. As in most regions, increasing urbanization and human populations are reducing the amount of suitable wolf habitat. Farms and ranches are being sold and converted into developments at an alarming rate. In addition, recreational development in and around federal forest lands severely diminishes the value of these lands for wolf recovery. There are also geographical and legal barriers that prevent wolf recolonization from adjacent areas. Regardless of the source of these barriers, the end result is that these available habitats are not being utilized which constitutes a significant curtailment of range.

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

Commercial take of wolves is currently illegal, though should wolves lose their ESA protection it could become a significant factor in preventing the reestablishment of wolves within this region. The amount of poaching for commercial purposes is unknown but will be totally dependant upon the regulatory status of the gray wolf (i.e. protected or not). For example bounties still exist on the books in some states that could make harvesting wolves profitable. Recreational take is also dependant upon the regulatory status of the wolf. Currently, hunting is restricted but without federal protections some states have already signified their intention to hunt wolves. We would expect a few research related mortalities (capture and handling mortality) though it is unlikely that these will present any significant impact on the population. All these issues indicate the need for continued federal protection under the ESA, and the need for implementing a recovery plan that can monitor and regulate the take from the above factors and make management

adjustments accordingly.

c. Disease or predation

Many diseases and parasites are found among the canids and some of these can create significant problems in wolf recovery, and require monitoring and appropriate treatment to ensure that they do not spread and impact the entire population. While some individuals may die from diseases, they generally are not considered a significant problem to wolf recovery in the southern Rockies. Most wolves in North America have had regular exposure to many of the canine diseases over the years and survive. Of course, any gray wolves that become reestablished in the Southern Rocky Mountain DPS should be monitored for disease or parasite problems and treated as necessary. Were wolves to be reintroduced they would be vaccinated or treated for canine diseases and parasites.

Natural predation from other wolves, bears, mountain lions, and the defensive tactics of prey species is relatively rare and would not be expected to significantly affect gray wolf recovery. However, the risk of human-caused predation can be substantial even while under federal management and protection (64% - 96% of all mortality among the reestablished wolves in the Western US, 65 Fed. Reg. 43467). Wolf populations in the Southern Rocky Mountain region were extirpated largely due to human-caused mortality and there continues to be a high level of malevolence towards the wolf from relatively small elements in the private and state government sectors. Some states currently offer bounties for wolf kills and agricultural interests are advocating against wolf recovery. Clearly the threat of human predation has not been reduced or eliminated in any substantive way, therefore we must have the continued presence of federal management and ESA protection until wolves have achieved some recovery goal as defined by a Southern Rockies recovery plan.

d. The inadequacy of existing regulatory mechanisms

The Southern Rocky Mountain DPS contains over 30 million acres of federal lands that have not yet adequately addressed wolf management issues. The proposed Western DPS will do nothing to encourage recovery in the southern Rocky Mountain region, as its regulatory influence will stop as soon as the wolf populations in the northern Rockies have recovered sufficiently to delist (possibly within 3-5 years). Without a specific recovery plan that involves the lands controlled by the Forest Service and Park Service, it appears highly unlikely that management plans for the National Forests, National Parks, and National Recreation Areas will adequately address wolf conservation. Examination of the region's federal land management plans reveals the lack of any discernable wolf recovery effort. See, e.g. 16 U.S.C. § 1536 (a)(1)(2). State management authorities have reaffirmed the ancient bounty systems that were so effective in extirpating the wolf historically. Some states have passed or are considering anti-wolf legislation such as Colorado, which recently passed a law that discourages wolf re-population by requiring that the legislature first approve any reintroduction of species into the state (H.B. 1322, signed by Governor 5/24/00). All this indicates the need for continued federal management in this area with a specific recovery plan and continued protection under the ESA.

e. Other natural or manmade factors affecting its continued existence

Within the Southern Rocky Mountain DPS there is a large livestock industry that has historically dealt with increased predation through extirpation of the predator. Government-sponsored trapping and hunting of wolves was instrumental in driving the gray wolf towards extinction and the chief reason that the gray wolf was listed as an endangered species. Obviously such depredation control actions can severely affect the population, dependant upon what conservation status that population has. With good federal control and a responsive management plan, these impacts can be small. Without adequate federal controls and protection, the individual states and agricultural interests appear ready and willing to again extirpate the wolf. The threat from unrestricted, livestock depredation control clearly represents a present and ongoing threat to the recovery of the gray wolf and requires continued federal management in the Southern Rockies with a specific recovery plan and continued protection under the ESA.

IV. SUMMARY AND CONCLUSIONS

The ongoing restoration of gray wolves in the lower 48 states is one of the most important conservation success stories of this and the last century. While much progress has been made, there still remain significant gaps in the historical distribution of gray wolves. While some of these areas are lost forever to development and degradation, others still contain vast tracts of land that contain suitable wolf habitat. The Southern Rockies, with its relatively low human population density, high proportions of federal lands and abundant prey populations, is one area where tremendous potential exists to restore this important ecological actor. Unfortunately that potential will not be realized under existing plans or proposals.

In this document and others cited in this text, Defenders of Wildlife has presented evidence that wolves can be returned to the Southern Rockies. In addition, we have provided materials that indicate that wolves will benefit ecosystems in this region, that they have provided economic benefit in other areas, and that well-managed wolf recovery is supported by a majority of the region's citizens. These latter arguments indicate that wolves should be restored to the Southern Rockies.

We also demonstrated that the Southern Rocky Mountain wolf population meets the definition of a DPS under the ESA. We have clearly shown that this eco-region and its wolves are discrete from both the Northern Rockies and Southwest recovery areas. We have also demonstrated that this discrete region constitutes a significant portion of the species' range. The SRM eco-region is similar

Lastly and perhaps most importantly, we've demonstrated that no measure of wolf recovery will occur in this region without federal leadership. The current proposed reclassification rule would inevitably end federal involvement in the Southern Rockies. That will leave the few recolonizing wolves with no recovery plan and little chance of survival. Moreover, these wolves would be wandering into an area where the federal government has done little or nothing to alleviate threats to the animals or to encourage their recovery.

For all of the above reasons, the Southern Rockies gray wolf must be designated as a distinct population segment whereby the FWS, in consultation with a recovery team, draws up a recovery plan and takes the steps necessary to restore this animal to its important ecological role in this region.

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Appendix 1. Federal lands found within the proposed Southern Rocky Mountain Distinct Population Segment.

Northern Arizona		Black Canyon NM 20 766	
National Forests	Acres	Florissant Fossil Beds NM 5 998	
Kaibab NF (North only)	646 386	Hovenweep NM 784	
National Parks/Monuments	Acres	Colorado NM 20 534	
Grand Canyon NP	1 217 403	<u>Dinosaur NM</u>	<u>210 278</u>
Petrified Forest NP (a of 93533)	31 178	<i>Colorado TOTAL</i>	<i>13 883 714</i>
Canyon de Chelly NM	83 840		
<u>Navajo NM</u>	<u>360</u>	Utah	
<i>Arizona TOTAL</i>	<i>1 979 167</i>	National Forests	Acres
New Mexico		Wasatch-Cache NF	1 200 000
National Forests	Acres	Unita NF	949 848
Carson NF	1 500 000	Ashley NF	1 384 131
Sante Fe NF	1 600 000	Manti-LaSal NF	1 327 600
National Parks/Monuments	Acres	Fishlake NF	1 304 524
Aztec Ruins NM	318	Dixie NF	2 000 000
Bandelier NM	33 677	National Parks/Monuments	Acres
<u>Capulin Volcano NM</u>	<u>793</u>	Arches NM	73 379
<i>New Mexico TOTAL</i>	<i>3 134 788</i>	Canyonlands NM	337 598
Colorado		Capitol Reef NM	241 904
National Forests	Acres	Bryce Canyon	35 835
Arapaho/Roosevelt NF	1 300 000	Zion NM	146 556
Grand Mesa NF	351 705	Grand Staircase-Escalante	1 700 000
Gunnison NF	1 760 000	Glen Canyon NRA	1 000 000
Rio Grande NF	1 860 000	<u>Natural Bridges</u>	<u>7 636</u>
Medicine Bow-		<i>Utah TOTAL</i>	<i>11 709 011</i>
Routt ($\frac{3}{4}$ of 1 126 346)	844 760	DPS TOTAL	30 706 68
San Isabel NF	1 000 000		
San Juan NF	2 086 484		
Uncompahgre NF	1 050 207		
White River NF	2 000 000		
Pike NF	1 106 604		
Colorado (con't)			
National Parks/Monuments	Acres		
Rocky Mountain NP	265 594		