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*From Conflict to Coexistence*

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# Restoring the Gray Wolf to the Southern Rocky Mountains: Anatomy of a Campaign to Resolve a Conservation Issue

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Habitat loss, habitat fragmentation, and persecution by humans over the last several decades have significantly reduced occupied historic range for most large carnivore species (Fuller 1995; Fuller and Kittredge 1996). An interest in recovering these species has spawned numerous restoration projects (Reading and Clark 1996) and a burgeoning number of articles and other scientific literature regarding the ecological importance of large carnivores (Estes et al. 1989; McLaren and Peterson 1994; Terborgh et al. 1999; Ripple and Larsen 2000; Berger et al. 2001; Ripple et al. 2001; Terborgh et al. 2001; Mech and Boitani, 2003; Mech and Peterson, 2003); the varied biological and sociopolitical aspects of large carnivore conservation (Clark et al. 1996; Keiter and Locke 1996; Kellert et al. 1996; Rasker and Hackman 1996; Weber and Rabinowitz 1996; Nie 2003); and the outcome of individual restoration projects (Reading and Clark 1996; Breitenmoser et al. 2001; Phillips et al. 2003; Smith et al. 2003).

In contrast, scant information exists on how to catalyze consideration of a large carnivore conservation or restoration project so that final decisions regarding implementation are based on relevant legal and scientific standards and are supported by most if not all of the affected parties. This chapter attempts to fill that gap by providing the details of a campaign to catalyze such consideration of restoring the gray wolf (*Canis lupus*) to the southern Rocky Mountain (SRM) region.

After centuries of persecution, by the late 1950s the number of gray wolves inhabiting the conterminous United States had reached an all-time low (Young and Goldman 1944; Young 1970; Brown 1983; Nowak 1983).

By then, less than 1% of the species' historic range was occupied by fewer than 1,000 wolves in the remote forests of northeastern Minnesota. Additionally, probably fewer than 20 wolves inhabited Isle Royale National Park, a 546 km<sup>2</sup> (210 mi<sup>2</sup>) island in Lake Superior (Stenlund 1955; Mech 1966; Peterson 1977; Fuller et al. 1992; Thiel 1993). Passage of the Endangered Species Act (ESA) in 1973 provided protection for gray wolves and signaled a new era for conservation. Within 30 years, recovery programs relying on expansion of extant populations in Minnesota and Canada, along with reintroduction efforts in the northern Rocky Mountains and the southwestern United States, resulted in significant increases in wolf numbers and distribution. By March 2003, the species occupied slightly less than 5% of its historic range in the conterminous United States and included about 3,500 animals.

In response to the improved conservation status for gray wolves, in April 2003 the U.S. Fish and Wildlife Service (USFWS) released a reclassification rule indicating that recovery had essentially been completed in most of the conterminous United States and reduced federal protection for the species (USFWS 2003a). The reclassification rule divided the lower forty-eight states into three distinct population segments (DPS)—areas that support wolf populations, are somewhat separated from one another, are significant to the overall conservation of the species, and are considered separately under the ESA (Figure 12.1).

The USFWS's definition of recovery is important because further recovery activities will be difficult to implement once the species is removed from ESA listing. It is unlikely that state legislators, state game commissions, and corresponding state game agencies would initiate actions for recovering wolves once the species has been removed from the federal list of threatened and endangered species, as is shown by the following examples.

In 1995, the Montana Legislature passed Senate Bill 394, which amends Title 81 (Department of Livestock) sections by adding the wolf to the definition of predatory animal (81-7-101, MCA). Furthermore, it states: "The Department of Livestock shall conduct the destruction, extermination, and control of predatory animals capable of killing, destroying, maiming, or injuring domestic livestock or domestic poultry, and the protection and safeguarding of livestock and poultry in this state against depredations from these animals" (81-7-102, MCA). This section also states that the Department of Livestock shall "adopt rules applicable to

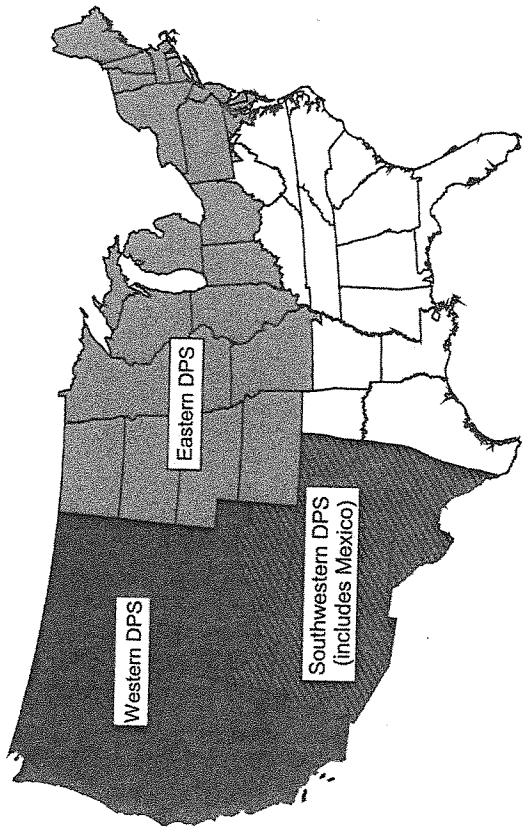


FIGURE 12.1 Final reclassification scheme for the gray wolf in the contiguous United States. USFWS 2003a.

predatory animal control which are necessary and proper for the systematic destruction of the predatory animals by hunting, trapping, and poisoning operations and payments of bounties.” The effective date of this act is “whenever the gray wolf is removed from the list of threatened or endangered species by the appropriate agency of the United States government.”

In September 1989, the Colorado Wildlife Commission adopted a resolution opposing reintroduction of the gray wolf. Colorado state law (#35-40-107 and 108) authorizes payment of a \$2 bounty on wolves, and in October 1999 the Colorado General Assembly effected a bill that requires the state legislature to approve any reintroduction of a federally listed species (Colorado state law #33-2-105.5).

In March 2000, the New Mexico Wildlife Commission unanimously reaffirmed its opposition to reintroducing Mexican wolves.

In late 2001, legislators in Utah began considering passage of a state law that would require the USFWS to remove any wolf that dispersed to the state (E. E. Bangs, pers. comm.).

The final federal reclassification rule indicated that the recovery objectives for the eastern gray wolf DPS and the western gray wolf DPS were met in late winter 1999 and December 2002, respectively. Consequently, the USFWS determined that additional recovery activities for those two re-

gions were unnecessary (USFWS 2003a, 2003b, 2003c). The final rule noted that recovery in the southwestern gray wolf DPS, on the other hand, was incomplete because wolf numbers were low and threats were high. Because of this the USFWS decided to classify the southwestern gray wolf DPS as endangered, except for animals in the experimental-nonesential population area that had been created to support the reintroduction of the Mexican wolf (*C. l. baileyi*) in the Blue Range Wolf Recovery Area (USFWS 1996, 1998). Experimental-nonesential populations are designated by the USFWS per section 10(j) of the ESA to minimize conflict between humans and members of an endangered species involved in a reintroduction project (Parker and Phillips 1991).

The determination on the status of the southwestern gray wolf DPS resulted from the USFWS's evaluation of the best scientific information available. This information indicated that any other determination was inappropriate. The ESA requires that a listed species be recovered across a significant portion of its historic range before it can be removed from the list of endangered and threatened wildlife (50 CFR 402.02, ESA section 4(a)(1), United States Ninth Circuit Court of Appeals 2001). Some nongovernmental conservation organizations (conservation NGOs) and scientists pointed out that wolf recovery in the southwestern United States would require that a large area in the region be made available for restoration efforts. The final configuration of the southwestern gray wolf DPS accomplished that (see Figure 12.1).

This chapter details the efforts of conservation NGOs to catalyze public consideration of wolf restoration in the southern Rocky Mountains region (SRM), a specific area within the southwestern gray wolf DPS. The campaign aims to foment a final decision that is based on the pertinent legal and scientific standards, and enjoys the support of most—if not all—of the affected parties. Because of the biological, logistical, fiscal, and sociopolitical complexity of wolf restoration, this chapter should be useful to others working to advance carnivore restoration and conservation projects that are mired in controversy, misunderstanding, and misinformation.

### Southern Rocky Mountains and Gray Wolf Restoration

The effort to restore wolves to the SRM springs from the region's unique characteristics, including vast expanses of unroaded public land and burgeoning populations of wild ungulates. The SRM extends from south-

central Wyoming through western Colorado into north-central New Mexico (Shinneman et al. 2000). The region includes 39,000 mi<sup>2</sup> of public land that supports sufficient prey to sustain a viable population of wolves, and currently represents a significant gap in the range of the species (Shinneman et al. 2000). The last wolf known from the SRM was shot in the San Juan Mountains in southern Colorado in 1945 (Bennett 1994).

The SRM region contains about one and a half times more public land than is available to wolves in the Greater Yellowstone Ecosystem (25,000 mi<sup>2</sup>), and almost twice as much as is available in central Idaho (20,781 mi<sup>2</sup>) (Figure 12.2). The region also contains about 6 times the amount of public land available to Mexican wolves in the Blue Range Wolf Recovery Area (BRWRA) in southeastern Arizona and southwestern New Mexico (6,854 mi<sup>2</sup>). Lastly, the SRM region includes 1.7 to 25 times more public land than other sites considered by some to be appropriate for wolf restoration (Ferris et al. 1999).

Government agencies and some private landowners presently manage extensive tracts of land in the SRM in a fashion that could facilitate wolf recovery. The region includes significant roadless areas covering about 14,000 mi<sup>2</sup> and about 7,000 mi<sup>2</sup> of legally designated or *de facto* wilderness (Shinneman et al. 2000), which equals 70% of the wilderness available to wolves in the Yellowstone area. It is also comparable to the amount of wilderness available to wolves in central Idaho, and is about four times the amount of wilderness available to Mexican wolves in the BRWRA. Not surprisingly, a congressionally mandated study concluded that the Colorado portion of the SRM could support over 1,000 wolves (Bennett 1994). Additionally, a 1994 public opinion poll revealed that about 71% of registered voters in Colorado supported the restoration of gray wolves to the state (Manfredo et al. 1994; Pate et al. 1996).

Some believe that wolf recovery in the SRM could be especially significant from a continental perspective. Because the ecoregion is nearly equidistant from the northern Rocky Mountains and the BRWRA, it is possible that a SRM population would contribute significantly to the establishment and maintenance of a spatially segregated population of wolves that extended from the Arctic to Mexico. On the significance of wolf restoration to the SRM, noted wolf authority Dr. L. David Mech (2000) wrote: "Ultimately, then, this restoration could connect the entire North American wolf population from Minnesota, Wisconsin, and Michigan through Canada

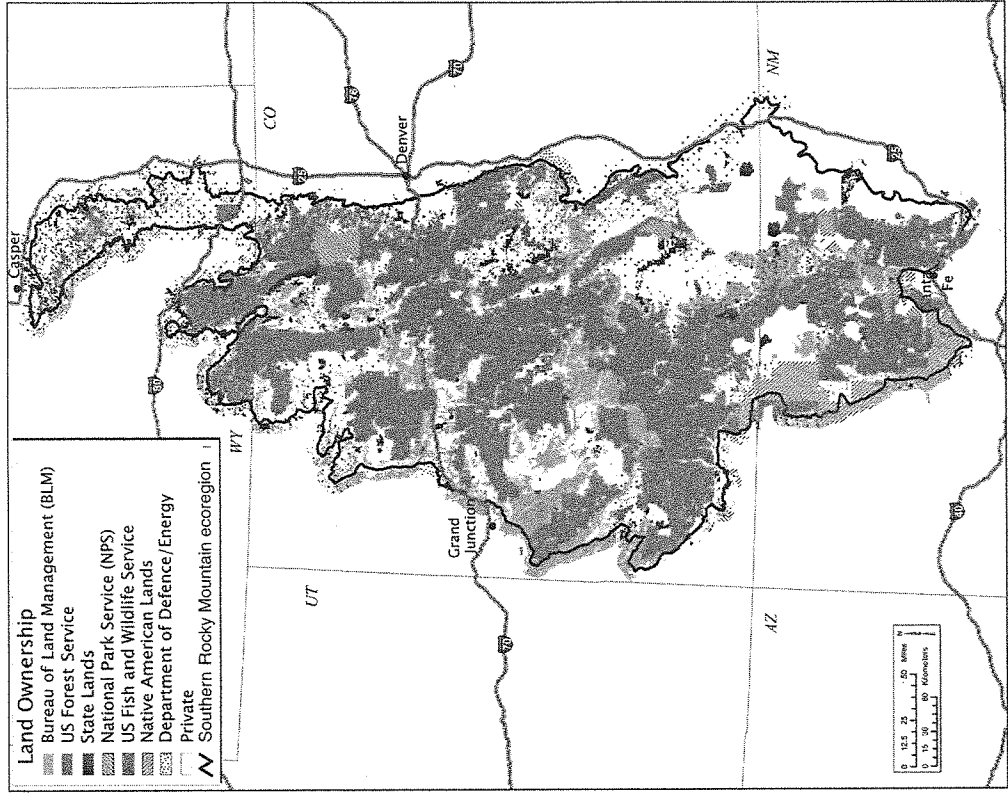


FIGURE 12.2 Land ownership patterns in the southern Rocky Mountain ecoregion. Shinneman et al. 2000.

and Alaska, down the Rocky Mountains into Mexico. It would be difficult to overestimate the biological and conservation value of this achievement.”

Given the strong public support for wolf restoration in the SRM, and the maturation of existing wolf reintroduction projects elsewhere in the lower forty-eight states, a group of experts met at Vermejo Park Ranch in northern New Mexico during December 1997 to consider the issue of

restoring wolves to the SRM. That meeting gave rise to recognition that three steps were requisite to resolving the issue: (1) development of coalitions that would focus on advocacy, education, and research; (2) development and dissemination of the best available science on the matter; and (3) development of an outreach program to engage affected parties in serious and comprehensive discussions about restoring wolves to the SRM.

### Step 1: Development of Coalitions

Wolf restoration is a controversial issue and one that federal and state agencies and elected officials are often reluctant to consider. For example, even though well-respected biologists were arguing for restoring the wolf to Yellowstone Park as early as the 1940s (Leopold 1944) and some within the Department of Interior openly discussed the issue during the 1970s (Weaver 1978), it was not until 1994 that the issue was finally resolved (USFWS 1994). Because of this institutional and political reluctance, it was concluded that serious consideration of the issue could only be advanced through the formation of a coalition that strongly advocated wolf restoration—ultimately leading to the formation of the Southern Rockies Wolf Restoration Project in February 2000.

### Coalitions to Promote Restoration

The Southern Rockies Wolf Restoration Project is a coalition of regional and national conservation organizations dedicated to restoring wolves to their full ecological role throughout the SRM. Member groups include Sinapu, Sierra Club (national), the Wildlands Project, Defenders of Wildlife, National Wildlife Federation, the Center for Biological Diversity, the New Mexico Wildlife Federation, and the New Mexico Wilderness Alliance. Supporting groups include several other regional and national conservation organizations.

The project's efforts are rooted in the principles of conservation biology and conflict resolution. Much of its work must satisfy the scrutiny of their scientific advisory team, a group of well-respected biologists with extensive experience with wolf restoration. Working from the best available science, the project engages in discussions with all who are interested in wolf restoration—from ranchers, to hunters, to conservation and wildlife organizations, to policymakers—based on the premise that open-minded communication and careful consideration of credible scientific and policy in-



formation will ultimately result in wolf restoration in the SRM. Adherence to that premise has, thus far, spawned several interesting endeavors.

Since inception, the project has developed a population and habitat viability assessment for wolves in the region (Phillips et al. 2000); cosponsored a public opinion poll (Meadow 2001; Meadow et al., in press); cosponsored the development of a feasibility study of the social aspects of wolf restoration (Phillips et al., in prep.); and successfully challenged the USFWS to consider wolf recovery in the SRM region in light of relevant scientific and legal standards rather than standards applicable only to wolf recovery in the northern Rocky Mountains.

This final point is extremely important. In response to the improved conservation status of gray wolves in the northern Rocky Mountains and the Great Lakes region by the late 1990s, the USFWS began developing a new national vision for wolf recovery. This vision first appeared in July 2000 as a proposed reclassification rule (USFWS 2000). The proposal indicated that the SRM was best considered as part of the western gray wolf DPS. The proposal further indicated that as soon as recovery objectives developed for the northern Rocky Mountains were realized, then the USFWS would delist the western gray wolf DPS, thus precluding any additional federal restoration efforts anywhere in the DPS, including the SRM, and squelching any further effort to restore wolves to the SRM.

For two years following release of the proposed rule, the Southern Rockies Wolf Restoration Project worked diligently to convince the USFWS that the proposed rule was inconsistent with relevant scientific and legal standards for recovery. The project successfully advanced its message by submitting comments on the proposal; by educating its membership about the proposal, thus generating comments from citizens from around the country and overwhelming participation at regional hearings; by writing letters to the editor in regionwide newspapers; by encouraging the interest of elected officials; by effecting strategic and frequent communication with the USFWS; and by alerting state game agencies to the deficiencies of the proposed rule. This effort spurred high-ranking officials in Idaho, Montana, Wyoming, Colorado, and New Mexico to send a rare joint letter to the director of the USFWS requesting a rescission of the proposed rule. Letters from members of the U.S. Congress to the USFWS also resulted from the coordinated efforts of the project.

While the USFWS did not rescind the proposal, the project was partially successful since the final reclassification rule (USFWS 2003a) shifted

the southern two-thirds of the SRM into the southwestern gray wolf DPS (see Figure 12.1), thus maintaining endangered classification for much of the region. This decision represents tacit recognition that wolf recovery in the southwestern United States (including the southern half of the SRM) is far from complete, setting the stage for comprehensive and science-based recovery planning and implementation. Although somewhat successful in the political advocacy arena, the project's efforts require ongoing complementary strides within the realms of constituent education and biological research/monitoring.

### **Coalitions Dedicated to Education and Outreach**

The second type of coalition we formed was dedicated to education and outreach and was named the Wolf Forum for the Southern Rockies. Disseminating relevant and credible information to affected parties is an important component of any large carnivore restoration project (Reading and Clark 1996), replacing exaggeration and misinformation with facts and science-based estimations of the results of possible actions. Recognition of this catalyzed the formation of the Wolf Forum for the Southern Rockies.

The forum aims to disseminate scientific information and position statements from diverse organizations that either oppose or support wolf restoration in the ecoregion. In order to remain impartial, the forum will not take a position on wolf restoration. Member groups include the following public educational zoological institutions: the Denver Zoo, the Cheyenne Mountain Zoo, the Albuquerque Biological Park, the Pueblo Zoo, and the International Wolf Center.

The forum operates two complementary activities rooted in the premise that "good information provided to good people leads to good decisions." First, it disseminates diverse viewpoints on wolf restoration. Any recognized professional organization that has a stake in the issue is invited to submit to the forum its position statement regarding restoring wolves to the SRM. If the position statement is determined by the forum's steering committee to be respectful and professional in tone, then it will be posted on the forum's website. Such postings will ensure that interested parties can review various perspectives on the issue.

Second, the forum disseminates credible scientific information. The forum will accept scientific publications for review by their science advisory team. If the advisory team determines that a submission is based primarily on peer-reviewed or peer-edited scientific literature and presents a profes-

sional and balanced analysis of data, then the team will recommend endorsement of the publication by the forum. The forum will post endorsed publications on the website and actively distribute the publication to the public at each of the member facilities and at off-site outreach events.

Because of the forum's emphasis on information dissemination, its greatest asset is the member groups' relationships with 3 million patrons and members. Consequently, the future addition of other zoological/ecological educational institutions will expand the effectiveness of the forum.

### **Coalitions Dedicated to Research**

The third type of coalition we developed was dedicated to research and was called the Southern Rockies Wolf Monitoring and Research Team. Research and monitoring are important components of any responsible restoration project (IUCN 1998) and scientists have documented previous wolf restoration projects, yielding volumes of new information (Phillips and Smith 1996; Bangs et al. 1998; Fritts et al. 2001; Paquet et al. 2001; Phillips et al. 2003). Clearly, if a wolf restoration project in the SRM moved forward, it would require high-quality research and monitoring. This recognition catalyzed the formation of the Southern Rockies Wolf Monitoring and Research Team.

The team consists of biologists from the Turner Endangered Species Fund, the U.S. Geological Survey Biological Resources Division, Michigan Technological University, the Wildlife Conservation Society, the Wildlands Project, and the Denver Zoological Foundation. The team has committed to providing fiscal, logistical, and intellectual support—along with at least 700,000 acres of livestock-free, nearly contiguous, high-quality habitat where manipulative experiments and field studies could be performed. Notably, this public-private partnership could do much to ameliorate fiscal criticism by wolf restoration opponents, because it would maximize the amount of private funding that is used to offset the cost of research and monitoring.

### **Step 2: Development and Dissemination of the Best Available Science**

Section 4(b) of the ESA and related USFWS policies clearly emphasize that decisions regarding listed species must be based on the best available scientific and commercial data. Before 1999, only Bennett (1994) had at-

tempted to estimate the biological potential of the SRM to support wolves. While his work indicated that western Colorado could support a population of 1,000 wolves, the analysis was limited in scope (only national forest lands in western Colorado were evaluated) and generalized across the landscape. Improved habitat suitability estimates for the entire SRM under current and future conditions were needed based on much improved analytical techniques (Carroll et al. 2001a, 2001b). Further, there was a need for a new public opinion poll to determine if majority support for wolf restoration had changed since the mid-1990s. Lastly, there was need for a research effort to combine the myriad biological, social, economic, and political aspects of the issue in a comprehensive assessment.

#### **Localized Study of Habitat Suitability**

In 1999, researchers initiated an assessment of the ecological and socioeconomic factors that might influence wolf restoration over nearly 3,100 mi<sup>2</sup> in the southern portion of the SRM. The study included 418 mi<sup>2</sup> of the Carson National Forest, the privately owned Vermejo Park Ranch (covering 910 mi<sup>2</sup>), and six additional parcels (covering 734 mi<sup>2</sup>) of private land that are managed for conservation purposes. Results indicated that this relatively small area could easily support 100 wolves or more owing to adequate prey populations, favorable patterns of land ownership and management, and potentially few conflicts with livestock (Southern Rockies Ecosystem Project 2000).

#### **Wolf Population and Habitat Viability Assessment**

In August 2000, several interested groups organized a population and habitat viability assessment (PHVA) for gray wolves in the SRM, with the respected Conservation Breeding Specialist Group (CBSG) serving as an expert and neutral facilitator and organizer. CBSG is a member of the Species Survival Commission of the IUCN—World Conservation Union, and for more than a decade has been developing, testing, and applying science-based tools and processes to assist with management of imperiled species and imperiled biomes. By bringing together scientists, landowners, wildlife agency personnel, conservationists, ranchers, hunters, and interested individuals, the PHVA catalyzed a broad public discussion about restoring wolves to the SRM (Phillips et al. 2000).

Notably, participation in the PHVA by organizations and individuals did not imply support for wolf restoration; rather, it served as an opportunity to share views and expertise on biological and sociological issues rele-

vant to wolf restoration. The workshop created an opportunity for participants to share ideas, served as a forum to discuss the implications of wolf restoration to the region, and used modeling to identify potential habitat for wolves by illuminating factors such as prey and road density. The final report indicated that the biological suitability of the SRM for gray wolves was very high and that the issue was characterized by complex and onerous social and political challenges (Phillips et al. 2000).

### **Regional Study of Habitat Suitability**

In 2001, researchers who had participated in the PHVA initiated a study using static and dynamic spatial models to evaluate suitability of the SRM for reintroduction of gray wolves (Carroll et al. 2003). In particular, the study questioned whether reintroduction would advance restoration by increasing the species' distribution beyond what might be expected through natural range expansion by wolves inhabiting Montana, Wyoming, or Idaho (i.e., the northern Rocky Mountains).

Carroll et al. (2003) used multiple logistic regression to develop a resource-selection function relating wolf distribution in the Greater Yellowstone region with regional-scale habitat variables for the SRM. Results indicated that areas of the SRM with resource-selection-function values similar to those of currently inhabited areas in Yellowstone could potentially support more than 1,000 wolves. They also employed a spatially explicit dynamic population model (i.e., PATCH model) to predict wolf distribution and viability at several potential reintroduction sites within the SRM under current landscape conditions and two contrasting predictions of future landscape conditions. The PATCH model predicted a wolf population of greater than 1,000 animals but indicated that development trends over the next 25 years may result in the loss of one of four potential regional subpopulations and increased isolation of the remaining three (Carroll et al. 2003). The results also indicated that, owing to the low level of connectivity between the Yellowstone area and the SRM, there was virtually no chance for a wolf population to become established in the SRM via recolonization by wolves dispersing from the Yellowstone area. The findings by Carroll et al. (2003) corroborated the findings of previous studies (Bennett 1994; Martin et al. 1999) that indicated that the SRM could support a self-sustaining population of wolves (Table 12.1).

To further clarify the regional value of the SRM as a gray wolf restoration site, in 2002 researchers initiated a comprehensive assessment of potential habitat, landscape-level threats, and population viability for gray

TABLE 12.1  
Results of various research projects to estimate the capacity of the southern Rocky Mountains to support wolves

Model and Scenario	Number of Packs	Mean Pack Size (adults)	Mean Pop. Size (including pups)
PATC—Landscape scenario A <sup>a</sup> (Carroll et al. 2003)	141.5	5.10	1,337
PATCH—Landscape scenario B <sup>b</sup> (Carroll et al. 2003)	72.7	4.93	664
PATCH—Landscape scenario C <sup>c</sup> (Carroll et al. 2003)	48.0	4.85	431
Resource selection function (RSF) (Carroll et al. 2003)	N/A	N/A	1,305
Bennett (1994) (Colorado only)	N/A	N/A	500–1,000
Martin et al. (1999) (Colorado only)	67	~5.4	670

<sup>a</sup>Landscape scenario A = current conditions in the southern Rocky Mountains.

<sup>b</sup>Landscape scenario B = human population as projected for 2025 (U.S. Census Bureau, unpublished data) with increased road development (Theobald et al. 1996) on private lands only.

<sup>c</sup>Landscape scenario C = human population as projected for 2025 (U.S. Census Bureau, unpublished data) with increased road development (Theobald et al. 1996) on private and unprotected public lands.

wolves (and jaguars, *Panthera onca*) across the southwestern United States and northern Mexico (Carroll et al., in prep.). The study area includes southeastern Utah, all of Arizona, most of New Mexico, southwestern Texas, and several states in Mexico, including Chihuahua, Coahuila, Nuevo Leon, Durango, and portions of Tamaulipas and Zacatecas. This area encompasses the majority of the estimated historic distribution of the Mexican wolf, excluding the southern extreme of its range, and it encompasses nearly all of the Southwestern DPS not considered by Carroll et al. (2003).

Results from this work and Carroll et al. (2003) will serve as the basis for a regional-scale conservation strategy that: (1) addresses specific threats (landscape change and development) to wolf (and jaguar) population recovery in the southwestern DPS and northern Mexico; (2) prioritizes areas for wolf (and jaguar) restoration; and (3) compares the efficacy of alternative restoration strategies.

### Comprehensive Wolf Restoration Feasibility Report

In 1988, the U.S. Senate–House Interior Appropriations Committee posed four questions to the U.S. Fish and Wildlife Service and U.S. National Park Service about restoring wolves to Yellowstone National Park and environs. The questions resulted in the *Wolves for Yellowstone?* stud-

ies, which presented more than 1,200 pages of evaluation that greatly advanced resolution of the issue of restoring wolves to Yellowstone (Yellowstone National Park et al. 1990; Varley and Brewster 1992).

In 2002, taking a cue from the outcome of the *Wolves for Yellowstone?* studies, researchers began developing the first comprehensive report on the biological, economic, and sociopolitical aspects of restoring wolves to the SRM. The authors of the report, "Suitability of the Southern Rockies for Wolf Restoration: An Ecological and Social Assessment" (Phillips et al., in prep.), aim to use a science-based approach to assemble all information relevant to the issue. The report will not advocate for or against restoration but will instead simply present the facts of the issue. As such, the report will facilitate an evolution of the discussion of the issue from the current misinformed and sometimes exaggerated debate to a discourse characterized by well-reasoned positions based on relevant legal, biological, and social standards.

### Public Opinion Polls

Public attitudes about gray wolves have greatly affected the fortunes of the species. For example, the belief that wolves represented a significant impediment to the country's manifest destiny to tame the wilderness fueled a federal extermination policy that persisted for more than a century (Phillips et al., in press). By the early 1970s, however, attitudes toward nature in general and wolves specifically had changed. By this time, a strong pro-wolf constituency arose from a public perception that the species had an inherent right to exist and was important for maintaining ecosystem health. Given the connection between public attitudes and the viability of wolf populations, the necessity to accurately gauge public attitudes about gray wolves in the SRM is clear.

In 1994, a public opinion poll revealed that about 71% of registered voters in Colorado supported the restoration of gray wolves to Colorado (Manfredo et al. 1994; Pate et al. 1996). By late 2000, however, Manfredo et al. (1994) could only be considered a data point, rather than a gauge of current public opinion on the subject. Further, the survey focused exclusively on Colorado, leaving the rest of the SRM—and the Southwestern DPS—as significant gaps. Consequently, Decision Research conducted new public opinion research concerning the restoration of wolves to the SRM by polling 500 registered voters in Colorado and 400 in each New Mexico and Arizona. The survey revealed strong support for wolf

restoration (Meadow 2001; Meadow et al., in press). In each of the states, a majority of voters favored restoring wolves into national forest and wilderness areas. Support was widespread, nonpartisan, and exceeded 60% for seven of eight demographic groups, including males and females, Republicans and Democrats, hunting households and nonhunters. At the conclusion of the survey, after voters had heard arguments both for and against restoration, support for wolf restoration increased to 70% overall, thus indicating the importance of public education to increase support for wolf restoration.

Upon completion of the poll, the sponsoring organizations launched a comprehensive public relations effort to release the findings. This effort included notification to local, regional, and national media and direct correspondence with high-ranking state and federal officials. Additionally, the sponsoring organizations arranged two meetings (in Denver, Colorado, and Albuquerque, New Mexico) for state and federal officials and interested citizens to meet directly with Decision Research, and to hear Decision Research explain their scientific methods for collecting, analyzing, and interpreting data.

### Study of the Economics of Wolf Restoration

As wolf recovery has proceeded throughout the United States, some groups have voiced concern about the species' potential to negatively impact local and regional economies. Specifically, the livestock and hunting industries have claimed that wolf recovery is bad for business. Research, however, does not support these claims, but rather demonstrates that a wolf population and wolf recovery and restoration activities can generate positive economic benefits. For example, Schaller (1996) indicated that the International Wolf Center in Ely, Minnesota, generates about \$3 million in annual economic activity and as many as 66 new jobs in the region. The center is based in Ely because of the presence of a wolf population in northern Minnesota. A study done by Cornell University asserts that red wolf restoration at the Alligator River National Wildlife Refuge generated an annual average regional economic benefit of about \$37.5 million because of increased tourism spawned by the project (Rosen 1997). Before the reintroduction of wolves to Yellowstone Park, economists from the University of Montana estimated the project's net economic benefits at up to \$23 million annually from increased visitor expenditure (USFWS 1994).

Since wolves were released in Yellowstone in March 1995, researchers



have collected original data that will more precisely gauge the project's economic effects. Recently, the Yellowstone Park Foundation initiated a study to accomplish this task (Yellowstone Park Foundation 2003). Completion of the study will have immediate bearing on the issue of restoring gray wolves to the SRM by properly accounting for the costs and benefits of the species' presence in a portion of the northern Rocky Mountains.

### Step 3: Development of Education and Outreach

Since 1999, those working toward a full discussion of wolf restoration in the SRM have embraced the idea that such a discussion will arise only from a broad-based education and outreach program aimed at interested and affected parties. Proponents of restoration have repeatedly discussed the issue with high-ranking officials with the Departments of Interior and Agriculture; members of the U.S. Congress; and directors and senior staff from the U.S. Fish and Wildlife Service, the U.S. Forest Service, and state game agencies. Thus far, proponents of restoration have given more than 50 presentations at professional conferences and invited lectures hosted by federal and state agencies, conservation NGOs, and universities. Proponents have discussed wolf restoration with several owners of large tracts of land in northern New Mexico and southern Colorado. Lastly, proponents have published articles in membership magazines and newsletters and granted numerous interviews with regional and national media about restoring wolves to the SRM.

With much new information regarding wolf restoration in general (Phillips and Smith 1996; Bangs et al. 1998; Brown and Parsons 2001; Smith et al. 2003)—and restoration to the SRM in particular (Phillips et al. 2000; Carroll et al. 2003; Meadow et al., in press)—now appearing in peer-reviewed journals and other technical publications, those advocating a discussion of restoration intend to integrate such information in a sophisticated fashion into future outreach efforts. As mentioned earlier, the technical report titled “Suitability of the Southern Rockies for Wolf Restoration: An Ecological and Social Assessment” (Phillips et al., in prep.) will present several hundred pages of technical information. The report's length and technical nature are not designed to have the general public as the primary audience. Consequently, an effort is planned to integrate the report's highlights into a popular version called “The Truth About Wolves.” Watershed Media, a nonprofit organization that produces communication projects to

influence the transition to a more sustainable society, is working with the Southern Rockies Wolf Restoration Project and the Wolf Forum for the Southern Rockies to create a visually dynamic book that will serve as the centerpiece for future outreach efforts. In addition to the book and technical report, the Truth About Wolves campaign will include concerted outreach to the local, regional, and national media; three public symposia to be held in Colorado, New Mexico, and Washington, D.C.; a series of smaller public outreach events; and free web versions of "The Truth About Wolves" and related educational material. The Truth About Wolves campaign will be designed to project a clear sense of objectivity and scientific fact, rather than heated advocacy. The campaign is scheduled to begin in 2005.

These outreach efforts aim to convince federal and state game agencies—and all other interested and affected parties—that a comprehensive discussion about restoring wolves to the SRM is appropriate. Four factors support this claim: (1) the region's high biological suitability; (2) the broad and persistent bipartisan public support for the idea; (3) the USFWS's decision to retain an endangered status for the species throughout the southern half of the SRM; and (4) the strong relevance of the scientific and legal standards that guide endangered species recovery. A comprehensive discussion should result in the identification and proper consideration of the salient challenges of restoring gray wolves to the SRM. Such an outcome should greatly facilitate development of a final resolution to the issue that is acceptable to most, if not all, stakeholders.

## Conclusion

Restoring gray wolves is a highly emotional and politicized issue, made more so by the biological success of the species in Great Lakes region and the northern Rocky Mountains. Even though the species still occupies less than 5% of its historic range, wolf population numbers today exceed those of the early 1900s. While some claim that recovery requires greater occupation of historic range, others assert that additional restoration efforts are superfluous for a species that is represented by several thousand individuals. Regardless of one's position on the issue, the southwestern gray wolf DPS, which includes over 50% of the SRM, retains an endangered classification, thus requiring the USFWS to develop and implement a recovery plan to repatriate the species to a significant portion of its historic range there. Consequently, the issue of restoring wolves to the SRM remains relevant and un-

resolved. A comprehensive campaign is now underway to use relevant scientific and legal standards and concerted outreach and education efforts to achieve a final resolution to the issue that will be supported by a majority of the affected parties. In the end, the success of this campaign will not be measured by whether wolves are restored to the SRM, but by how clearly affected parties understand the facts at the core of the debate.

Much future work will be required to press the importance of an objective, science-based approach to resolving the issue of restoring wolves to the SRM. The coalitions that have formed around the issue should immediately and obviously support efforts by the USFWS to develop a recovery plan, which is the next most important step in reaching a resolution.

The challenges related to developing a recovery plan notwithstanding, implementation will require a much greater effort. After a recovery plan is approved, consideration should be given to forming a citizen management committee that would assume differential responsibility for this most difficult task. This approach was very useful in advancing a broadly supported plan for restoring grizzly bears to central Idaho (USFWS 2000; Roy et al. 2001). Both the Southern Rockies Wolf Restoration Project and the Wolf Forum for the Southern Rockies could do much to advance the idea of a citizen management committee for wolves.

Many who work on predator restoration and conservation initiatives have concluded that facts and good science are necessary for advancing their work. Indeed, this book is testimony to that fact. However, often it is neither the scientists nor conservationists who decide which efforts will be funded or what research will be used as a reference for policy decisions about predators. In democratic societies, politicians are usually charged with making such decisions. Like all of us, politicians are often motivated by expediency, experience, and self-interest rather than by knowledge, especially when the facts do not support their values and beliefs (Petty et al. 1997). While knowledge helps to determine an individual's values and attitudes, which significantly impact decision making, its importance is often overestimated, especially among people who value knowledge greatly, such as scientists, conservationists, and ecological restorationists (Reading 1993; Kellert et al. 1996). Consequently, politicians are somewhat innately inclined, and most are lobbied frequently, to discount the best science available, especially when science-based answers about predator restoration and conservation are difficult to understand, do not support their values and beliefs, and counter their vested interests.

Despite these limitations, the political process is our best crucible for grinding the requisite public debate that will foment the social changes necessary for effective restoration and conservation of predators. The past and future activities described in this chapter should contribute much to that onerous but absolutely essential process.

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