

**Lower 48-State and Mexico Gray wolf  
(*Canis lupus*) listing, as revised**

**5-Year Review:  
Summary and Evaluation**

**U.S. Fish and Wildlife Service  
Washington Office  
Arlington, VA**

## 5-YEAR REVIEW

**Species reviewed:** Lower 48-State and Mexico gray wolf (*Canis lupus*) listing, as revised

### 1.0 GENERAL INFORMATION

#### 1.1 Reviewers

**Lead Office:** Endangered Species Program, Headquarters Office, Arlington, VA

**Cooperating Regional Offices:** Endangered Species Program, Regions 1, 2, 3, 4, 5, 6, and 8.

**1.2 Methodology used to complete the review:** This 5-year status review was initiated on May 5, 2011, in conjunction with the Service's proposed rule to revise the list of endangered and threatened wildlife for the gray wolf in the Eastern United States (76 FR 26086). This review was a national effort (see cooperating offices above) lead by the Headquarters Office in Arlington, VA. None of this review was contracted out.

#### 1.3 Background:

**1.3.1 FR Notice citation announcing initiation of this review:** Endangered and Threatened Wildlife and Plants; Proposed Rule to Revise the List of Endangered and Threatened Wildlife for the Gray Wolf in the Eastern United States, Initiation of Status Reviews for the Gray Wolf and for the Eastern Wolf (76 FR 26086, May 5, 2011)

**1.3.2 Wolf biology:** For information on the biology of gray wolves refer to the preambles of our previous actions (68 FR 15804, April 1, 2003; 74 FR 15123, April 2, 2009; 75 FR 46894, August 4, 2010; 76 FR 81666, December 28, 2011).

**1.3.3 Listing history:** Gray wolves were originally listed as subspecies or as regional populations of subspecies in the conterminous United States and Mexico. In 1967, we listed the eastern timber wolf (*Canis lupus lycaon*) in the Great Lakes region (32 FR 4001, March 11, 1967), and in 1973 we listed *C. l. irremotus* in the northern Rocky Mountains (38 FR 14678, June 4, 1973). Both listings were promulgated under the Endangered Species Conservation Act of 1969; subsequently, on January 4, 1974, these subspecies were listed under the Endangered Species Act of 1973 (ESA) (39 FR 1171). We listed a third gray wolf subspecies, the Mexican wolf (*C. l. baileyi*) as endangered on April 28, 1976 (41 FR 17740), in the southwestern United States and Mexico. On June 14, 1976 (41 FR 24064), we listed the Texas gray wolf subspecies (*C. l. monstrabilis*) as endangered in Texas and Mexico.

In 1978, we published a rule (43 FR 9607, March 9, 1978) reclassifying the gray wolf as an endangered population at the species level (*C. lupus*) throughout the conterminous 48 States and Mexico, except for the Minnesota gray wolf population, which was classified as threatened.

At that time, we considered the gray wolf group in Minnesota to be a listable entity under the ESA, and we considered the gray wolf group in Mexico and the 48 conterminous States other than Minnesota to be another listable entity (43 FR 9607 and 9610, respectively, March 9, 1978). The separate subspecies listings thus were subsumed into the listings for the gray wolf in Minnesota and the gray wolf in the rest of the conterminous United States and Mexico. In that 1978 rule, we also identified critical habitat in Michigan and Minnesota and promulgated special regulations under section 4(d) of the ESA for operating a wolf management program in Minnesota. The special regulation was later modified (50 FR 50793, December 12, 1985).

The 1978 reclassification was undertaken to “most conveniently” handle a listing that needed to be revised because of changes in our understanding of wolf taxonomy, and in recognition of the fact that individual wolves sometimes cross subspecific boundaries. In addition, we sought to clarify that the gray wolf was only listed south of the Canadian border. However, the 1978 rule also stipulated that “biological subspecies would continue to be maintained and dealt with as separate entities” (43 FR 9609), and offered “the firmest assurance that [the Service] will continue to recognize valid biological subspecies for purposes of its research and conservation programs” (43 FR 9610, March 9, 1978). Accordingly, recovery plans were developed for the wolf populations in the following regions of the United States: the northern Rocky Mountains in 1980, revised in 1987; the Great Lakes in 1978, revised in 1992; and the Southwest in 1982, the revision of which is now underway.

Between 2003 and 2009 we published several rules revising the 1978 conterminous listing for *C. lupus* (68 FR 15804, April 1, 2003; 72 FR 6052, February 8, 2007; 73 FR 10514, February 27, 2008; 74 FR 15070 and 74 FR 15123, April 2, 2009). However, each of these revisions was challenged in court. As a result of court orders (*Defenders of Wildlife, et al. v. Norton, et al.*, 354 F.Supp.2d 1156 (D. Or. 2005); *National Wildlife Federation, et al. v. Norton, et al.*, 386 F.Supp.2d 553 (D. Vt. 2005); *Defenders of Wildlife, et al. v. Hall, et al.*, 565 F.Supp.2d 1160 (D. Mont. 2008); *Defenders of Wildlife, et al. v. Salazar, et al.*, 729 F.Supp.2d 1207 (D. Mont. 2010); *Humane Society of the United States v. Kempthorne*, 579 F. Supp. 2d 7 (D.D.C. 2008)) and, in one case, a settlement agreement (*Humane Society of the United States v. Salazar*, 1:09-CV-1092-PLF (D.D.C.)), by the spring of 2010 the listing for *C. lupus* in 50 CFR 17.11 remained unchanged from the reclassification that occurred in 1978 (except for the addition of the three experimental populations (Yellowstone Experimental Population Area (59 FR 60252, November 22, 1994), Central Idaho Experimental Population Area (59 FR 60266, November 22, 1994), and the Mexican Wolf Experimental Population (63 FR 1752, January 12, 1998)). For additional information on these Federal Actions and their associated litigation history refer to the relevant associated rules (68 FR 15804, April 1, 2003; 72 FR 6052, February 8, 2007; 73 FR 10514, February 27, 2008; 74 FR 15070 and 74 FR 15123, April 2, 2009) or Previous Federal Actions sections of our most recent wolf actions (76 FR 61782, October 5, 2011; 76 FR 81666, December 28, 2011).

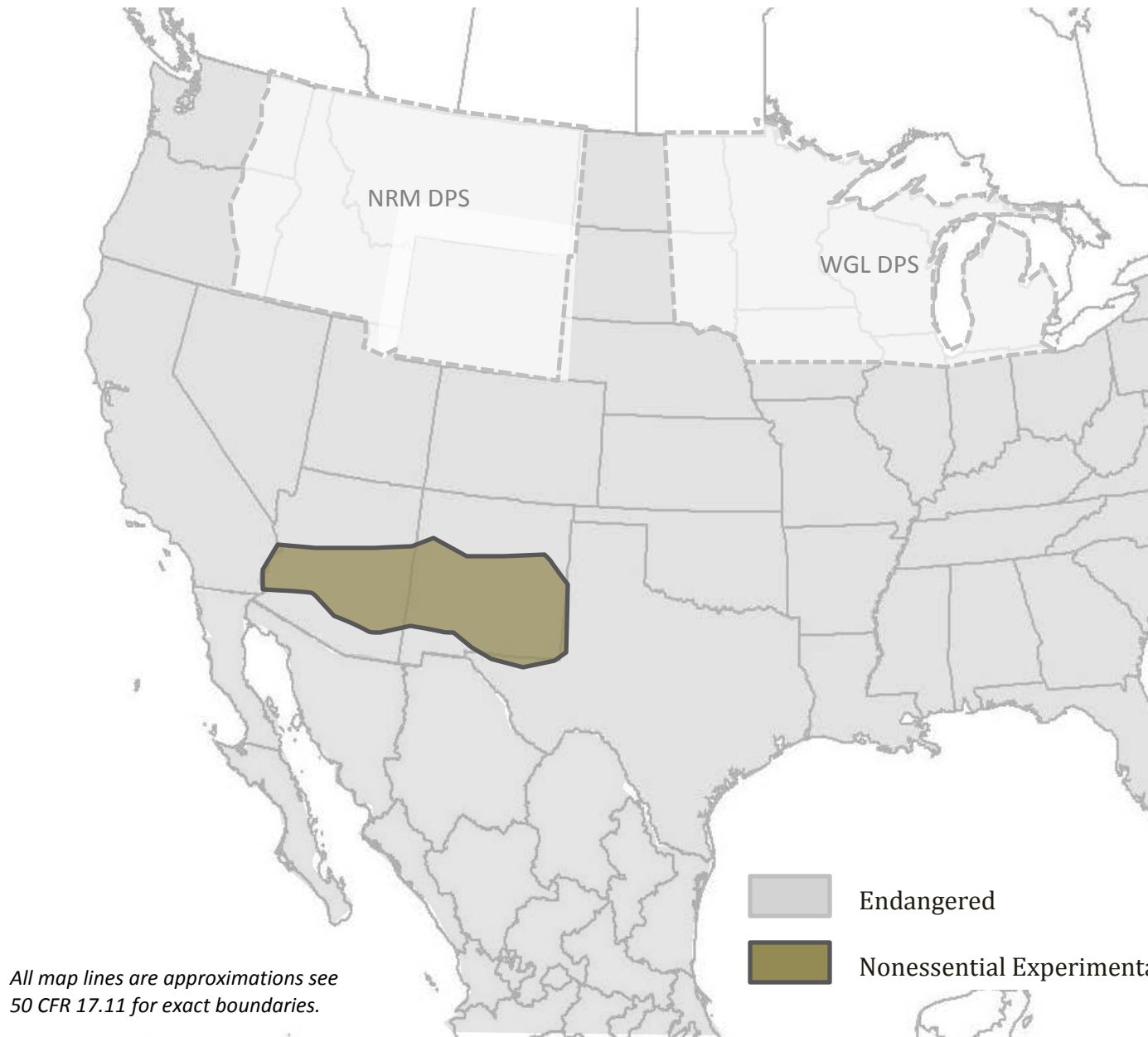
On May 5, 2011, we published a final rule that implemented Section 1713 of Public Law 112–10, reinstating our April 2, 2009, delisting rule which identified the Northern Rocky Mountain (NRM) population of gray wolf as a distinct population segment (DPS) and, with the exception

of Wyoming, removed gray wolves in the DPS from the List of Endangered and Threatened Wildlife (76 FR 25590). Although gray wolves in Wyoming were not included in the May 5<sup>th</sup> final delisting, we have since proposed to remove gray wolves in Wyoming from the List (76 FR 61782, October 5, 2011).

On December 28, 2011, we revised the 1978 listing of the Minnesota population of gray wolves to conform to current statutory and policy requirements. We revised what was previously listed as the Minnesota population of the gray wolf and identified it as the Western Great Lakes (WGL) Distinct Population Segment (DPS) (the DPS includes all of Minnesota, Wisconsin, and Michigan and portions of the adjacent states) and removed that WGL DPS from the List of Endangered and Threatened Wildlife (76 FR 81666). This action became effective on January 27, 2012.

As a result of the recent actions described above, the 1978 reclassification for *C. lupus* now encompasses all or portions of 42 States (AL, AR, CA, CO, CT, DE, FL, GA, KS, KY, LA, MA, MD, ME, MO, MS, NC, NE, NH, NJ, NV, NY, OK, PA, RI, SC, TN, VA, VT and WV, AZ, NM, TX, and portions of IA, IN, IL, ND, OH, OR, SD, UT, and WA) and Mexico (Figure 1). Therefore, this review, a review of the listed entity, is limited to this remainder of the 1978 reclassification, except where historical context and a wider discussion would benefit the reader's understanding of the current listed entity. Although gray wolves in Wyoming remain protected under the ESA, they are part of the Northern Rocky Mountain DPS and are proposed for delisting (76 FR 61782, October 5, 2011). Therefore, gray wolves in Wyoming are not part of this status review.

Figure 1: The listed entity: *C. lupus* all or portions of 42 States and



#### **1.3.4 Associated rulemakings:**

Non-Essential Experimental Population Designation

**Federal Register notice:** 63 FR 1752, January 12, 1998

**Action:** Establishment of a Nonessential Experimental Population of the Mexican Gray Wolf in Arizona and New Mexico

**1.3.5 Review History:** A status review of the currently listed entity (figure 1) has not been done before. However, the most recent status reviews for the three gray wolf populations in the conterminous U.S. are referenced below.

- **Population:** southwest population of gray wolves  
**Document:** Mexican Wolf Conservation Assessment  
**Date:** May 5, 2010
- **Population:** northern Rocky Mountain population of gray wolves  
**Document:** Final Rule to Identify the NRM Population of Gray Wolf as a DPS and To Revise the List of Endangered and Threatened Wildlife  
**Date/FR citation:** 74 FR 15123, April 2, 2009; 76 FR 25590, May 5, 2011.  
**Result:** Delist due to recovery in most of the NRM DPS, except in Wyoming (*effective May 5, 2011 per Section 1713 of Public Law 112–10*)
- **Population:** western Great Lakes population of gray wolves  
**Document:** Final Rule Revising the Listing of the Gray Wolf in the Western Great Lakes  
**Date/FR citation:** December 28, 2011; 76 FR 81666  
**Result:** Delist due to recovery (*effective January 27, 2012*)

**1.3.6 Species' Recovery Priority Number at start of 5-year review:**

At the start of this 5-year review, the Recovery Priority Number for the listed entity was 15C. This number indicates that the entity faces a low degree of threat, has a high recovery potential, and is in conflict with construction, development, or other forms of economic activity.

Degree of Threat	Recovery Potential	Taxonomy	Priority	Conflict
High	High	Monotypic Genus	1	1C
		Species	2	2C
		Subspecies/DPS	3	3C
	Low	Monotypic Genus	4	4C
		Species	5	5C
		Subspecies/DPS	6	6C
Moderate	High	Monotypic Genus	7	7C
		Species	8	8C
		Subspecies/DPS	9	9C
	Low	Monotypic Genus	10	10C
		Species	11	11C
		Subspecies/DPS	12	12C
Low	High	Monotypic Genus	13	13C
		Species	14	14C
		Subspecies/DPS	15	15C
	Low	Monotypic Genus	16	16C
		Species	17	17C
		Subspecies/DPS	18	18C
The above ranking system for determining Recovery Priority Numbers was established in 1983 (48 FR 43098, September 21, 1983 as corrected in 48 FR 51985, November 15, 1983).				

### 1.3.7 Recovery Plans

Consistent with assurances we provided in our 1978 reclassification of the gray wolf in the conterminous United States (43 FR 9607, March 9, 1978), we implemented three gray wolf recovery programs in the following regions of the country: the Western Great Lakes (Minnesota, Michigan, and Wisconsin, administered by the Service's Great Lakes, Big Rivers Region), the Northern Rocky Mountains (Idaho, Montana, and Wyoming, administered by the Service's Mountain-Prairie Region and Pacific Region), and the Southwest (Arizona, New Mexico, Texas, Oklahoma, Mexico, administered by the Service's Southwest Region). Recovery plans were developed in each of these areas to organize and prioritize recovery criteria and actions appropriate to the unique local circumstances of the gray wolf. As such, the three gray wolf recovery programs have functioned independently from one another since their inceptions. A general description of these recovery plans is provided below.

**Name of plan:** Northern Rocky Mountain Wolf Recovery Plan

**Date issued:** 1980, revised in 1987

**Status of plan:** This plan remains active as gray wolves in the Wyoming portion of the northern Rocky Mountains are currently protected under the ESA.

The 1980 recovery plan objective was to re-establish and maintain viable populations of the NRM wolf in its former range where feasible (USFWS 1980); however, the plan did not contain any recovery goals. The 1987 revision did include a recovery goal, which was later reevaluated and modified several times between 1994 and 2009 (USFWS 1994; Fritts and Carbyn 1995; 65 FR 43450, July 13, 2000; Bangs 2002; 68 FR 15804, April 1, 2003; 72 FR 6106, February 8, 2007; 72 FR 36939, July 6, 2007; 73 FR 10514, February 27, 2008; 73 FR 63926, October 28, 2008; 74 FR 15123, April 2, 2009).

Natural recovery of the northern Rocky Mountain wolf population began in the early 1980s when wolf packs from Canada began to recolonize areas of northwest Montana. In order to further facilitate recovery, in 1995 and 1996 we reintroduced wolves from southwestern Canada to remote public lands in central Idaho and Yellowstone National Park. These reintroductions, combined with mortality management, greatly expanded the numbers and distribution of wolves in the Northern Rocky Mountains. Subsequent management plans and regulations developed by the States to maintain these recovered populations at healthy levels led to the recent delisting of gray wolves in most of the northern Rocky Mountains (76 FR 61782, May 5, 2011).

By the end of 2011, the northern Rocky Mountain gray wolf population had exceeded, for the twelfth consecutive year, the numerical and distributional recovery goal (minimum of 30 breeding pairs and over 300 wolves well-distributed among the 3 States (ID, MT, WY)) and contained a minimum population estimate of over 1,700 wolves and over 100 breeding pairs; this is a slight increase from 2010 estimates despite State run harvests that took over 300 wolves in 2011 (Jimenez 2012, pers. comm.). This population is about five and a half times higher than the minimum population recovery goal and about three and a half times higher than the breeding pair recovery goal (Jimenez 2012, pers. comm.). For more details on the recovery of gray wolves in the northern Rocky Mountains see the final delisting rule published on April 2, 2009 (74 FR 15123), the October 5, 2011 proposal to delist wolves in Wyoming (76 FR 61782), and the 2011 annual report (USFWS *et al.*, 2012).

**Name of plan:** Eastern Timber Wolf Recovery Plan

**Date issued:** 1978, revised in 1992

**Status of plan:** This plan is no longer active as gray wolves in the western Great Lakes are recovered and no longer listed.

The 1978 and 1992 Recovery Plans for the Eastern Timber Wolf contained two recovery criteria: (1) a secure wolf population in Minnesota, and (2) a second population outside Minnesota and Isle Royale consisting of 100 wolves for 5 successive years. At the time of delisting, both of the numeric and distributional recovery criteria had been exceeded. Specifically, the Minnesota wolf population had increased from an estimated 1,000 individuals in 1976 to nearly 3,000, and the estimated wolf range in the State had expanded by approximately 225 percent (from



approximately 15,000 sq mi (38,850 sq km) to approximately 34,000 sq mi (88,060 sq km)) since 1970. In addition, the combined wolf population for Wisconsin and Michigan had exceeded the second recovery criterion for a second population since 2001. For more details on the recovery of gray wolves in the western Great Lakes see the final delisting rule published on December 28, 2011 (76 FR 81666).

**Name of plan:** Mexican Wolf Recovery Plan

**Date issued:** 1982

**Status of plan:** This plan is currently undergoing revision.

Two recovery plans have been written for the Mexican wolf: (1) the 1982 Mexican Wolf Recovery Plan, which was written by a recovery team established by the Service and signed by the Service and the Dirección General de la Fauna Silvestre in Mexico; and (2) the Programa de Recuperación del Lobo Mexicano (Programa de Recuperacion), written by a team of scientists in Mexico, in 1999 (SEMARNAP 2000). Both of these plans acknowledge the binational historical range of the Mexican wolf, but each plan was written within the context of the federal laws governing its content. The 1982 Mexican Wolf Recovery Plan was written pursuant to the Service's obligation to develop recovery plans for species protected by the ESA, whereas Mexico's plan was written pursuant to the Mexican federal law protecting wildlife, Norma Oficial Mexicana NOM-059-ECOL-1994.

The 1982 Mexican Wolf Recovery Plan recommends a two-pronged approach to recovery that includes establishment of a captive breeding program and reintroduction of wolves to the wild. Captive breeding of Mexican wolves began in 1981, expanding into a binational effort between the United States and Mexico to produce wolves for reintroduction. In the United States, Mexican wolves were reintroduced to the wild in 1998 in Arizona and New Mexico as a nonessential experimental population pursuant to section 10(j) of the ESA (63 FR 1752, January 12, 1998). Today, an interagency partnership of Federal, State, County, and Tribal entities manages the reintroduction, and the captive breeding program is managed for the Service under the American Zoological and Aquarium Association's Mexican wolf Species Survival Plan program. For more details on recovery planning and implementation for gray wolves in the Southwest see the Mexican Wolf Recovery Program Progress Report (2010) [http://www.fws.gov/southwest/es/mexicanwolf/pdf/2010\\_progress\\_report\\_final.pdf](http://www.fws.gov/southwest/es/mexicanwolf/pdf/2010_progress_report_final.pdf), the Mexican Wolf Conservation Assessment (USFWS 2010), and our 90-day finding on a petition to list the Mexican gray wolf as an endangered subspecies (75 FR 46894, August 4, 2010).

## **2.0 REVIEW ANALYSIS**

### **2.1 Distinct Population Segment Analysis**

The ESA allows us to list species, subspecies, and distinct population segment of any species of vertebrate fish or wildlife (16 U.S.C. 1532(16)). The current listing as described in Figure 1 is not a species or a single wolf subspecies. We therefore must evaluate whether or not it is a distinct population segment.

The specific provision for listing distinct population segments of vertebrates was enacted through the 1978 Amendments to the ESA (Public Law 95-362, November 10, 1978); these amendments replaced the ability to list vertebrate “populations” with the ability to list “distinct population segments” and treat them as species under the ESA. To interpret and implement the 1978 DPS amendment, the Service and the National Marine Fisheries Service jointly published the Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act (DPS policy) (61 FR 4722, February 7, 1996), setting policy standards for designating populations as “distinct.”

The March 1978 reclassification for *C. lupus* predated the November 1978 amendments to the ESA. Although the 1978 rule listed two *C. lupus* entities, i.e., the endangered and threatened entities described above, these listings were not predicated upon a formal DPS analysis. The 1978 reclassification listed *C. lupus* throughout the lower 48 States and Mexico; however, at that time, *C. lupus* had been extirpated from much of its historical range in the lower 48 States and was not known to have ever occupied the southeastern United States. This broad scale lower 48 State listing was employed as an approach of convenience, rather than an indication of where gray wolves existed or where gray wolf recovery would occur. In addition, the reclassification resulted in inclusion of the southeastern U.S., west to central Texas and Oklahoma, which was, and still is, generally accepted as not within the historical range of *C. lupus* but instead the historical range of a separate species of wolf (*Canis rufus*) (Young and Goldman 1944; Chambers *et al.*, in review).

In accordance with the 1996 Policy, to be recognized as a DPS, a population of vertebrate animals must be both discrete and significant (61 FR 4722, February 7, 1996). A population of a vertebrate taxon may be considered discrete if it satisfies either of the following conditions (1) it is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors (quantitative measures of genetic or morphological discontinuity may provide evidence of this separation), or (2) it is delimited by international governmental boundaries within which differences in control of exploitation, management or habitat, conservation status, or regulatory mechanisms exist that are significant in light of Section 4(a)(1)(D) of the ESA. If we determine that a population segment is discrete, we next consider available scientific evidence of its significance to the taxon to which it belongs. This may include, but is not limited to, the following: (1) Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; (2) evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon; (3) evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside of its historic range; and/or (4) evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics. If a vertebrate population is determined to be discrete and significant, we then evaluate the conservation status of the population to determine if it is threatened or endangered.

To initiate a DPS analysis it is first necessary to identify and describe the population(s) under consideration. Our regulations define a “population” as a “group of fish or wildlife... in common spatial arrangement that interbreed when mature” (50 CFR 17.3). We have refined that definition in experimental gray wolf reintroduction rules to mean “at least two breeding pairs of gray wolves that each successfully raise at least two young” annually for 2 consecutive years (59 FR 60252 and 60266, November 22, 1994). This definition represents what we believe are the minimum standards for a wolf population (USFWS 1994). The courts have supported this definition. The U.S. Court of Appeals for the 10<sup>th</sup> Circuit found that “by definition lone dispersers do not constitute a population or even part of a population, since they are not ‘in common spatial arrangement’ sufficient to interbreed with other members of a population” (*Wyoming Farm Bureau Federation v. Babbitt*, 199 F.3d 1224, 1234 (10<sup>th</sup> Cir. 2000)). The Court of Appeals for the 9<sup>th</sup> Circuit held that, despite “sporadic sightings of isolated indigenous wolves in the release area [a gray wolf reintroduction site], lone wolves, or ‘dispersers,’ do not constitute a population” under the ESA (*U.S. v. McKittrick*, 142 F. 3d 1170, 1175 (9<sup>th</sup> Cir. 1998), cert. denied, 525 U.S. 1072 (1999)). Thus, the courts have upheld our interpretation that pairs must breed in order to have a “population.” Below, we review the historical and current status of gray wolves in the conterminous U.S., by geographic region. Based on this review, we then provide a synthesis and recommendations for future actions.

## **2.2 Gray wolf distribution within the described boundary of the currently listed entity:**

### Gray Wolves in the Southwestern United States and Mexico:

Mexican wolves were effectively extirpated in the wild in both the United States and Mexico by the mid-1900s. A captive breeding program was established in the late 1970’s to save the Mexican wolf from extinction, conserve the subspecies’ genome, and provide healthy offspring for release to the wild (Parsons 1996, Lindsey and Siminski 2007). The breeding program was founded by three of the last six Mexican wolves removed from the wild in Mexico. The first Mexican wolf pups were conceived and born in captivity in the United States in 1981 (Parsons 1996, Hedrick *et al.* 1997, Lindsey and Siminski 2007). Mexico formally joined the captive breeding effort in 1987 (SEMARNAP 2000), and by 1994, the binational breeding program had produced a captive population of 92 wolves. These founding wolves and their offspring were initially referred to as the Certified lineage, later renamed the McBride lineage. In 1995, two additional lineages of pure Mexican wolves, the Ghost Ranch lineage, founded by two wolves, and the Aragon lineage, founded by two wolves, were integrated into the captive breeding program to increase the genetic diversity of the founder population due to the limited genetic diversity of the captive population and the potential for inbreeding depression to hinder its success (Parsons 1996, Hedrick *et al.* 1997). This increased the founding base of the captive population from three to seven pure Mexican wolves (Hedrick *et al.* 1997).

The binational captive breeding program has been managed pursuant to breeding protocols and genetic and demographic goals established by the Association of Zoos and Aquariums’ Species Survival Plan (AZA Mexican Wolf SSP) since 1994 (Mexican Wolf SSP Management Group 2009, Siminski and Spevak 2011). As of January 2012, the captive breeding program

housed 283 wolves in 52 facilities, 34 of which are in the United States and 18 of which are in Mexico. In an analysis of the captive population in 2011, the calculated retention of the original gene diversity of the founding seven wolves was 83.3 percent (Siminski and Spevak 2011).

In the United States, plans for the reintroduction of the Mexican wolf to the wild began to develop in the early-1990s, stimulated in part by a suit filed against the Service by seven environmental organizations for failure to implement provisions of the ESA (Wolf Action Group, *et al.* vs. United States, Civil Action CIV-90-0390-HB, U.S. District Court, New Mexico. Several analyses were conducted to assess locations for the reintroduction (Johnson *et al.* 1992, USFWS 1993), culminating with the Final Environmental Impact Statement, "Reintroduction of the Mexican Wolf within its Historic Range in the Southwestern United States," (FEIS) (USFWS 1996).

By 1998, the plans for the reintroduction were solidified in the final rule, "Establishment of a Nonessential Experimental Population of the Mexican Gray Wolf in Arizona and New Mexico" (Final Rule) (63 FR 1752, January 12, 1998). This designation was justified because wolves released into the wild would be genetically redundant to the material produced from the captive breeding program, the population would be geographically separate from other wolf populations, and because it allowed for regulatory flexibility in managing released wolves and their progeny, an important consideration at the time for gaining public support (63 FR 1752, January 12, 1998; Brown and Parsons 2001). Not all of the MWEPA was considered reintroduction and recovery habitat for the Mexican wolf. Much of the MWEPA provided a transition zone between the Blue Range Wolf Recovery Area (BRWRA) designated within the MWEPA and the endangered designation of the surrounding landscape (i.e., wolves outside of the MWEPA have full endangered status under the classification provided by the 1978 gray wolf listing) (63 FR 1752, January 12, 1998). The rule stipulated that the reintroduction of wolves would take place within the BRWRA, a 17,775 km<sup>2</sup> (6,845 mi<sup>2</sup>) area that included the Apache National Forest in east-central Arizona and the Gila National Forest in west-central New Mexico. The rule does not allow for wolves to occupy areas wholly outside the BRWRA.

The strategy for the reintroduction was to release 14 family groups of wolves over a period of five years in order to establish the population (63 FR 1752, January 12, 1998). The FEIS projected that the population target of at least 100 wild wolves and 18 breeding pairs would be reached in nine years, in 2006 (USFWS 1996). The Final Rule cautioned that failure to reintroduce Mexican wolves to the wild within a reasonable period of time could result in genetic, physical, or behavioral changes from prolonged periods in captivity that could hinder the recovery effort (63 FR 1752, January 12, 1998). Because a source population of Mexican wolves did not exist in the wild, the reintroduction would be entirely dependent on captive-bred wolves.

Beginning in 1998, 11 wolves from captive-breeding programs in the United States and Mexico were released in the Apache and Sitgreaves National Forests in Arizona and Gila National Forest in New Mexico. From 1998 through 2011 a total of 92 wolves were released into this area. At the end of 2011, a minimum of 58 Mexican wolves were counted in the wild in Arizona and

New Mexico, according to the annual survey completed by the Mexican wolf Interagency Field Team (IFT). This number is considered to be a minimum number of wolves known to be alive. Other non-collared wolves not located during the survey period may be present in the Blue Range Wolf Recovery Area. Of the 58 known wolves, there were 26 wolves (6 packs) in New Mexico and 32 wolves (6 packs) in Arizona. The survey indicated that there were a total of 6 pairs of wolves that met the Federal definition of breeding pairs at year's end. Compared to the 2010 minimum population count of 50 wolves, the 58 wolves demonstrate a slight increase in the known population in the wild.

Pups born in the summer must survive to December 31 of the given year to be counted as part of the Mexican wolf population. Of the 58 wolves, 18 were wild born pups that survived through the end of the year, which is an increase from the 14 pups that survived to the end of the year in 2010. The number of pups is also considered a minimum known number since it might not reflect pups surviving but not documented.

On October 11, 2011, Mexico released five captive wolves to the wild in northern Sonora. One of these wolves was poisoned on November 16, 2011, and three were poisoned on December 6, 2011. Mexico has initiated a law enforcement investigation of the deaths of these wolves. The remaining female wolf was still alive in the wild in February 2012, feeding on rabbits and rodents in the area (Cruz Roma 2012, pers. comm.).

Mexico has its own recovery plan for the Mexican wolf, Programa de Recuperación del Lobo Mexicano, which calls for the establishment of viable populations in Mexico but does not provide a specific number of wolves necessary for recovery pursuant to Norma Oficial Mexicana NOM-059-ECOL-1994. Mexico is developing plans to release additional wolves in accordance with its recovery plan.

In 2011, the Service convened a new Mexican Wolf Recovery Team, which is tasked with revising and updating the 1982 recovery plan. The new recovery plan will provide objective recovery criteria for the delisting of the Mexican wolf. A draft recovery plan is anticipated in late 2012, and final in late 2013.

#### Gray Wolves in the Pacific Northwest (outside of the NRM DPS):

At the time of Euro-American settlement gray wolves were abundant in Washington and Oregon. However, by the 1940s, as a result of intense human persecution, wolves in Washington and Oregon had become rare and were primarily confined to remote mountainous areas, mostly in the National Forests of the Cascade Mountains. Soon after the 1940s wolves were extirpated from the region entirely.

Despite limited preserved physical evidence for wolves in California (Schmidt 1991; Jurek 1994), there were many reports of wolves from around the state in the 1800's and early 1900's (e.g., Sage 1846; Price 1894; Dunn 1904; Dixon 1916; Young and Goldman 1944; Sumner and Dixon 1953; Schmidt 1991). The adaptability of wolves and the early first-hand accounts of wolves in California suggest that wolves likely occurred in northern California, the Sierra Nevada, and

southern California mountains. In Nevada, wolves may have always been scarce (Young and Goldman 1944), but probably occurred in the forested regions of the state (Young and Goldman 1944). There have been no confirmed reports of wolves in Nevada since their extirpation, which likely occurred in the 1940s (*id.*).

Wolves have recently begun to recolonize the Pacific Northwest as a result of dispersal from British Columbia and reintroduced wolves in the Northern Rocky Mountains. There are currently two confirmed gray wolf packs in the federally listed portion of Washington State (Lookout Pack and Teanaway Pack). Reproduction was confirmed in the Teanaway pack in June 2011, and is currently unknown in the Lookout pack. There are additional areas with suspected wolf activity, in the federally listed portion of Washington State that the Washington Department of Fish and Wildlife has plans to investigate/confirm in the summer of 2012. Up to five wolves from the Lookout pack were allegedly killed by poachers in 2008 (*U.S. v. White et al.* (Eastern District of Washington) 2011). To date, 2 radio-collared wolves from the Imnaha pack in northeast Oregon have dispersed west, across the NRM DPS boundary, and are currently in the federally listed portion of Oregon and northern California.

Of the wolves currently inhabiting the listed area of Washington State, three have been sampled to evaluate their genetic makeup and likely origin — two are from the Lookout Pack and one is from the Teanaway Pack (Pollinger *et al.* 2008, *in litt.*; Robinson *et al.* 2011, *in litt.*). Results of these genetic tests indicate that one individual descended from the wolf populations of southern British Columbia (the alpha male from the Lookout Pack); the alpha female of the Lookout pack was assigned to the reintroduced Idaho/GYA population. However, it is possible that this animal may have come from Southern British Columbia since microsatellite assay cannot distinguish between the reintroduced Idaho/GYA and Southern British Columbia wolf populations west of the Rockies (Robinson *et al.*, *in litt.* 2011). Genetic testing of the alpha female from the Teanaway Pack indicates that she is closely related to the male and female of the Lookout Pack (i.e., probably a descendent of the Lookout Pack's alpha pair) (Robinson *et al.*, *in litt.* 2011). The source of these wolves is relevant to the ongoing status review and potential consideration of this region as a DPS to the extent that it informs our view of discreteness and genetic uniqueness (a factor in both discreteness and significance determinations under the 1996 DPS policy).

Several recent studies have suggested that the genetic characteristics of coastal British Columbia wolves (and therefore dispersers from this area into the Pacific Northwest) are markedly different from other wolves in North America (Geffen *et al.* 2004; Muñoz-Fuentes *et al.* 2009; Weckworth *et al.* 2010; vonHoldt *et al.* 2011). However, this conclusion has been challenged by Chambers *et al.* (in review) who suggest that wolves in coastal British Columbia area are simply descendents of the Great Plains wolves (*Canis lupus nubilus*) that recolonized the area from the south following the retreat of the Pleistocene ice sheets in North America.

#### The Northeast:

It is widely accepted that wolves became extirpated from the northeastern United States by the year 1900 (Young and Goldman 1944; Nowak 2002; Villemure and Jolicoeur 2004). In our 2003

final rule we stated that we had reviewed the existing status of the wolf in the northeastern United States and found no reliable evidence of breeding pairs or wolves that had established territories (68 FR 15804, April 1, 2003). We reaffirmed this in the more recent 90-day finding on a petition to list a DPS of gray wolves in the northeastern U.S. (75 FR 32869, June 10, 2010). Although potential source populations of gray wolves occur north of the St. Lawrence River in Quebec and Ontario, Canada, within the recorded dispersal capability of a wolf, we currently have no information indicating that gray wolves have formed breeding pairs in the Northeast.

The Great Plains/Midwest (outside of the NRM and WGL DPSs):

By the early 20<sup>th</sup> century, targeted elimination programs had resulted in extirpation of gray wolves from Great Plains. Recent surveys have not been conducted to document the number of wolves or wolf presence in the Great Plains States between the areas known to be occupied by the recovered wolf populations in the northern Rocky Mountains and the Great Lakes region; however, a few individual dispersing wolves have been detected in North Dakota and South Dakota. The eastern portions of these States are within 81 miles (130 kilometers) from occupied habitat in Minnesota (76 FR 26100, May 5, 2011). An adult animal killed by a vehicle near Sturgis, South Dakota was a disperser from the Greater Yellowstone area in the Rocky Mountains to the west (Fain *et al.* 2010 cited in 76 FR 26100). The few lone individuals that have been detected in these areas are believed to be dispersing away from the more saturated habitat in the primary range (of the recovered DPSs or Canada populations) into peripheral areas where wolves are scarce or absent (76 FR 26100, May 5, 2011; Licht and Fritts 1994; Licht and Huffman 1996). Although it is possible for these dispersers to encounter and mate with another wolf outside the primary range of the recovered populations, we have no information suggesting that persistent breeding pairs have become established in the Great Plains.

A few individual dispersing wolves have been reported in other areas of the Midwest, including a wolf that dispersed from Michigan to north-central Missouri (Mech and Boitani 2003; Treves *et al.* 2009) and another that dispersed from Wisconsin to eastern Indiana (Thiel *et al.* 2009; Treves *et al.* 2009). At least two wolves have been reported in Illinois, one in 2002 and one in 2005 (Great Lakes Directory 2003). Two individual wolves were also reported (on different occasions) in Nebraska (Anschutz in litt. 2003, Anschutz in litt. 2006, Jobman in litt. 1995). Like those wolves detected in North and South Dakota, the few lone individuals that have been found in these other Midwest areas are dispersing away from the more saturated habitat in the primary range (of the recovered Western Great Lakes DPS) into peripheral areas where wolves are very scarce or absent. Although it is possible for these dispersers to encounter and mate with a mature wolf outside the primary range of the recovered population, we have no information suggesting that this has happened.

Southeastern United States:

As stated above, the 1978 reclassification listed *C. lupus* throughout the lower 48-States and Mexico; however, *C. lupus* is not known to have ever occupied the southeastern United States. It is generally accepted that this area was occupied by the red wolf (*Canis rufus*), a separate species (Chambers *et al.*, in review). In fact, Goldman's classification (Young and Goldman 1944) recognized both species of wolves in North America with the red wolf occupying parts of

the southeastern United States, extending west into central Texas, and the gray wolf occupying the remaining range of wolves in North America. The red wolf is currently listed as a separate species under the ESA and is not the subject of this status review.

### **2.3 Synthesis:**

All of our recovery planning efforts and gray wolf rulemakings since the promulgation of the 1978 rule have reflected the intent of the 1978 rule that gray wolves would be managed and recovered in three distinct areas of the lower 48 states: The Northern Rocky Mountains, the Western Great Lakes, and the Southwest (see Recovery Plan section above). Our recent actions, inclusive of the designation and delisting of the NRM and WGL DPSs (76 FR 25590, May 5, 2011 and 76 FR 81666, December 28, 2011, respectively), are an effort to recognize recovery in two of these three areas. Recovery efforts for gray wolves in the third area, the Southwest, are ongoing and a draft revised recovery plan covering that area is expected to be released by the end of 2012.

The current listed entity is neither a species nor a single subspecies, was listed prior to the issuance of the 1996 DPS policy, and is the outcome of a broad, generalized lower 48 State reclassification and subsequent targeted delistings of gray wolves in the NRM and WGL DPSs. Further, the described range of the current listed entity erroneously includes the southeastern United States; a region of the lower 48 States that is outside of historical range of *C. lupus*. Therefore, we do not believe that the currently listed entity represents the ideal listing configuration.

## **3.0 RESULTS**

### **Recommended Classification:**

The 5-year status review recommendation is that the *Canis lupus* entity as currently described on the List of Endangered and Threatened Wildlife and Plants (50 CFR 17.11) should be revised to reflect the distribution and status of *C. lupus* populations in the lower 48 States and Mexico by removing all areas currently included in the CFR range except where there is a valid species, subspecies, or DPS that is threatened or endangered. A 12-month finding on the petition to reclassify gray wolves in the Southwest as a subspecies or DPS will be completed by September 30, 2012. Status reviews for gray wolves in the Pacific Northwest and for the eastern wolf, both initiated on May 5, 2011, are also ongoing and we anticipate completing these by September 30, 2012 as well. The outcome of these reviews will identify which, if any, gray wolves should continue to receive protections under the ESA. Because we are in the process of identifying subspecies or populations that may continue to warrant protection under the ESA, we recommend that the listing status of the gray wolf remain intact until these regional status reviews are complete.



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**U.S. FISH AND WILDLIFE SERVICE**  
**5-YEAR REVIEW of**  
**Lower 48-State and Mexico Gray wolf (*Canis lupus*) Listing, as revised**

**Current Classification:** Endangered

**Recommendation resulting from the 5-Year Review:**

The 5-year status review recommendation is that the *Canis lupus* entity as currently described on the List of Endangered and Threatened Wildlife and Plants (50 CFR 17.11) should be revised to reflect the distribution and status of *C. lupus* populations in the lower 48 States and Mexico by removing all areas currently included in the CFR range except where there is a valid species, subspecies, or DPS that is threatened or endangered. A 12-month finding on the petition to reclassify gray wolves in the Southwest as a subspecies or DPS will be completed by September 30, 2012. Status reviews for gray wolves in the Pacific Northwest and for the eastern wolf, both initiated on May 5, 2011, are also ongoing and we anticipate completing these by September 30, 2012 as well. The outcome of these reviews will identify which, if any, gray wolves should continue to receive protections under the ESA. Because we are in the process of identifying subspecies or populations that may continue to warrant protection under the ESA, we recommend that the listing status of the gray wolf remain intact until these regional status reviews are complete.

**Review Conducted By:**

Branch of Recovery and Delisting, Endangered Species Program, Arlington, VA in coordination with Endangered Species Program in Regions 1, 2, 3, 4, 5, 6, and 8.

**REGIONAL APPROVAL:**

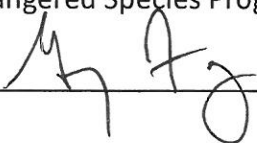
See record for regional concurrence

**WASHINGTON OFFICE APPROVAL:**

**Lead Assistant Director, Fish and Wildlife Service:**

Gary Frazer, Endangered Species Program, Assistant Director, Washington Office

Approve \_\_\_\_\_



Date \_\_\_\_\_

2/29/12