

American Society of Mammalogists

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To Whom it May Concern:

The American Society of Mammalogists (ASM) is a non-profit, professional, scientific, and educational Society consisting of nearly 2,500 members from all 50 United States and 60 other countries worldwide. The ASM was founded in 1919 and is the world's oldest and largest organization devoted to the study of mammals. We strongly support the conservation and responsible use of wild mammals based on current, sound, and accurate scientific knowledge. The ASM has a long history of reviewing issues related to mammalian conservation, and where appropriate, adopting positions on issues concerning the conservation and responsible management of mammals and their habitats based upon our scientific expertise.

The American Society of Mammalogists (ASM) herein provide comments on the U.S. Fish and Wildlife Service's (Service) proposed rule to revise the existing experimental population designation of the Mexican wolf (*Canis lupus baileyi*) in the Mexican Wolf Experimental Population Area (MWEPA) in Arizona and New Mexico under section 10(j) of the Endangered Species Act of 1973, as amended (ESA), 86 Fed. Reg. 59953 (October 29, 2021). ASM shows both support and concern for this proposed rule. Below we describe our comments.

1) ASM supports removal of the cap from the Population Objective. The Service has removed the cap of 325 wolves from the Population Objective for the MWEPA. In replacement, the Service has recommended that population recovery for the MWEPA requires an average **minimum** population size of 320 wolves over an 8-year period, including over 320 total wolves in each of the last 3 years of the 8-year period.

2) ASM requests that the Service consider additional genetic criteria for the Genetic Objective. The Service has added a new Genetic Objective to the experimental population designation for the Mexican wolf that states that this objective will be met *with the release of 22 wolves from captivity that survive to breeding*

age in the wild. The Service estimates that this will increase genetic diversity in the wild population to at least 90% of the diversity that is found in the captive population. They also state that this will reduce the incidence of inbreeding depression and aid adaptations by Mexican wolves to future environmental change.

ASM strongly recommends that the Genetic Objective be expanded to include additional measures of genetic diversity that are based on empirical data, including effective population size, genetic diversity, and inbreeding coefficients. In the proposed rule, the Service has based their genetic objective solely on findings from a population viability model that incorporated genetic metrics, such as genetic diversity and inbreeding. The Service also states in their Mexican Wolf Recovery Implementation Strategy (November 2017) that genetic monitoring is part of their recovery strategy. However, the Service does not provide assurance in this proposed rule how they will respond if the 22 released wolves that reach breeding age do not produce the desired genetic diversity. **We strongly recommend that the Service add more detailed criteria to the Genetic Objective that explicitly state how genetic variation will be monitored and the specific levels of effective population size, genetic diversity, and inbreeding they are attempting to meet.** This will safeguard the genetic health of the population in the event that 22 released wolves that reach breeding age are not generating adequate genetic diversity.

3) ASM strongly advises that the Service takes into consideration new scientific data that has recently become available that better describes the historical genetic diversity of the Mexican wolf. A recent study by Taron et al (2021) compared patterns of genetic diversity between historical wolf samples (early 1900s) and contemporary wolf samples using whole-genome sequencing data. They found that overall genetic diversity in wolves was higher in the historical population and that this has declined over the past one hundred years. Genomic restoration of endangered species is increasingly possible thanks to emerging, rapidly evolving genome engineering techniques. This approach is being used in genetic augmentation efforts for the black-footed ferret, which also had a small founding number of seven individuals for their captive population (Wisely et al. 2016). **ASM strongly urges the Service to use these historical levels of genetic diversity as a reference benchmark and consider using emerging genomic restoration methods, such as cloning, to augment genomic genetic diversity in the Mexican wolves.**

4) ASM recommends that the Service consider metapopulation resilience in developing their “take” policies and explicitly state that “take” will be consulted on for border projects that potentially impact connectivity with Mexican wolf populations in Mexico. The Service should aspire to use conventional metapopulation principles in the recovery of the Mexican wolf. In general, *the long-term population viability of a species is greater through the maintenance of a number of populations (i.e., metapopulation) across multiple, diverse, and semi-independent environments* (Allendorf et al. 2013). Metapopulations are more robust than single populations at persisting through demographic and genetic risks resulting from small population sizes. Currently, the Service is focused on managing the wild Mexican wolf within the current MWEPA boundaries as a single population. The Service states in the proposed rule that connectivity is low with the reintroduced Mexican wolf populations in Mexico and expected to remain low due to both poor habitat suitability between the two populations and the construction of the border wall between the United States and Mexico. Despite poor dispersal habitat, at least 4 wolves have crossed the border from the populations in Mexico within the past decade. Any construction of the border wall requires Federal oversight, which triggers the Service to consult on impacts to endangered species. The Service has implied in this proposed rule that the threat imposed by the border wall will not impact the Mexican wolf population within MWEPA in the United States because it can be recovered independent of connectivity with wolf populations in Mexico. However, Mexican wolf recovery in both countries will be more resilient to the threat of extinction if wolves are able to cross the border, thus making these semi-independent populations function more like a metapopulation instead of independent local populations. Therefore, **ASM strongly recommends that the “take” policies require that the Service will consult on border wall projects and review their impacts to the connectivity between the single**

MWEPA population in the United States and the Mexican wolf populations in Mexico. ASM also strongly encourages the continuance of binational collaboration between the United States and Mexico in efforts to recover Mexican wolf populations.

5) ASM recommends that the Service change their “take” policy on Mexican wolves that disperse outside of the MWEPA to ensure that wolves are allowed to freely and naturally establish populations outside of the MWEPA, namely in suitable habitat north of Interstate Highway 40 (I-40). Gray wolf recovery in other parts of the United States has been largely successful because wolves were not prevented from naturally establishing populations in suitable habitat outside of designated recovery zones. In both recovery efforts for gray wolves in the Northern Rockies and the Great Lakes regions, wolves were allowed to naturally establish populations outside of the designated recovery zones and were not subject to automatic intervention by managing Federal and State agencies. The allowance of natural range expansion by gray wolves in the Northern Rockies and Great Lakes has contributed to larger gray wolf populations that are more robust to the threats of extinction. In contrast, the “take” policies for the Service’s red wolf recovery program in the Smoky Mountains in the 1990s were designed to automatically relocate wolves that moved outside of designated recovery zones, which ultimately became a contributing factor to the failure of this recovery program. There is active scientific debate with regards to the historic location of the northern range boundary of Mexican wolves and the adaptive significance of historical admixture with northern gray wolf lineages (Hendricks et al. 2016; Wayne and Shaffer 2016; Heffelfinger et al. 2017a, b; Hendricks et al. 2017; Odell et al. 2018). Currently, the Service has a “take” policy that prompts the Interagency Field Team to relocate wolves back into the MWEPA if they disperse outside of the MWEPA. This relocation policy was implemented recently in 2021 with the dispersal of a Mexican wolf north of I-40. The Service allowed The Interagency Field Team to relocate this wolf 200 miles back to MWEPA, which was not a successful relocation as this wolf almost immediately dispersed north of I-40 again. This example is a prelude to what is likely going to be a growing issue as the MWEPA wolf population continues to grow within the recovery zone. This flexibility is especially important as wild mammals respond to changing environmental conditions due to global warming and other anthropogenic pressures. **ASM strongly recommends that the Service remove the “take” policy that promulgates the relocation of dispersing wolves back to the MWEPA. Instead, the Service should allow dispersing wolves to naturally colonize new areas of suitable habitat outside of the MWEPA and should only consider relocation when conflicts arise.**

In summary, ASM supports the Service’s removal of the population cap from the population objective, recommends that that the Service provide more criteria in the genetic objective that assures sufficient genetic diversity is explicitly identified and monitored for, and that the Service makes explicitly clear in their “take” policy that future border wall projects that may impact connectivity between wolf populations in the United States and Mexico is reviewed for “take” by the Service, as well as the freedom by wolves to naturally establish populations in suitable habitat outside of the MWEPA.



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