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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**[Docket No. FWS-R2-ES-2021-0103; FXES111302WOLF0-FF02ENEH00]**

**RIN 1018-BE52**

**Endangered and Threatened Wildlife and Plants; Revision to the Nonessential  
Experimental Population of the Mexican Wolf**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service or USFWS), revise the regulations for the nonessential experimental population of the Mexican wolf (*Canis lupus baileyi*) in the Mexican Wolf Experimental Population Area under section 10(j) of the Endangered Species Act of 1973, as amended (ESA). The regulatory revisions in this rule include a revised population objective, a new genetic objective, and the temporary restriction of three take provisions. This rule also includes an essentiality determination under section 10(j) of the ESA. The experimental population, inclusive of these revisions, will contribute to the long-term conservation and recovery of the Mexican wolf by alleviating demographic and genetic threats in this population consistent with our rangewide recovery strategy and goals for the Mexican wolf.

**DATES:** This rule is effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** This final rule, along with the October 29, 2021, proposed rule, public comments on the proposed rule, a final supplemental environmental impact statement, and record of decision, are available on the internet at <https://www.regulations.gov> in Docket No. FWS-R2-ES-2021-0103 or from the office listed in **FOR FURTHER INFORMATION CONTACT.**

**FOR FURTHER INFORMATION CONTACT:** Brady McGee, Mexican Wolf Recovery Coordinator, U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office, 2105 Osuna Rd, NE, Albuquerque, NM 87113; telephone 505–761–4748. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States. You may also visit the Mexican Wolf Recovery Program’s website at <https://www.fws.gov/program/mexican-wolf> for information about the experimental population designation for the Mexican wolf.

**SUPPLEMENTARY INFORMATION:**

**Background**

The Mexican wolf (*Canis lupus baileyi*) is a subspecies of gray wolf that historically occurred in portions of the southwestern United States and central and northern Mexico. Today, Mexican wolves occupy the Mexican Wolf Experimental Population Area in central and southern Arizona and New Mexico in the United States, and portions of the states of Sonora and Chihuahua in Mexico. Mexican wolves predominantly prey on elk in the United States, but other sources of prey throughout their current range include deer, small mammals, and birds. Mexican wolves are also known to scavenge on livestock (USFWS 2017b, pp. 12–19). Similar to other gray wolves, Mexican wolves are social predators that live and hunt in packs with an established

territory. Mexican wolf territories are dozens to several hundred square miles in size, and Mexican wolves may disperse long distances to establish a new territory (86 FR 59953, October 29, 2021, p. 86 FR 59959). Mexican wolves face threats across their range from demographic stochasticity (fluctuations in survival and reproduction associated with small population size); genetic issues including inbreeding, loss of heterozygosity, and loss of adaptive potential; and excessive human-caused mortality, including illegal killing (80 FR 2488, January 16, 2015; see also USFWS 2017a, pp. 23–34, and USFWS 2017b, p. 9, for additional discussion of these threats).

The Mexican wolf is listed under the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 et seq.), as endangered wherever it is found (80 FR 2488; January 16, 2015) except in the Mexican Wolf Experimental Population Area, where it is listed as a nonessential experimental population. The current List of Endangered and Threatened Wildlife under the ESA is found in part 17 of title 50 of the Code of Federal Regulations (CFR) at 50 CFR 17.11(h).

The 1982 amendments to the ESA included the addition of section 10(j), which allows for the designation of populations of listed species planned for reintroduction as “experimental populations.” Our implementing regulations at 50 CFR 17.81 state that the Service may designate a population of endangered or threatened species that we have released or will release into suitable natural habitat outside the species’ current natural range, but within its probable historical range, as an experimental population. Hereafter in this document, we refer to a species-specific rule issued under section 10(j) of the ESA as a “10(j) rule.”

### **This Rulemaking Action**

This final rule designates Mexican wolves in the Mexican Wolf Experimental Population Area (MWEPA) as a nonessential experimental population on the List of Endangered and Threatened Wildlife at 50 CFR 17.11(h) with a revised rule issued under section 10(j) of the ESA at 50 CFR 17.84(k). We developed the rule to comply with the District Court of Arizona remand (“March 31, 2018, order”) of our 2015 10(j) rule for the Mexican wolf (80 FR 2512; January 16, 2015).

On October 29, 2021, we published in the *Federal Register* (86 FR 59953) a proposed rule to revise the regulations for the nonessential experimental population designation of the Mexican wolf in the MWEPA in Arizona and New Mexico (“proposed rule”). The proposed rule included a revised population objective, a new genetic objective, and the temporary restriction of three take provisions for the Mexican wolf in the MWEPA, as well as a fresh essentiality determination under section 10(j) of the ESA. We proposed revisions that would individually and collectively contribute to the long-term conservation and recovery of the Mexican wolf by alleviating significant threats and achieving recovery goals consistent with our recovery strategy for the Mexican wolf (USFWS 2017b, pp. 10–17). We sought comments on the proposed rule and on a draft supplemental environmental impact statement (DSEIS) during a 90-day public comment period, ending January 27, 2022. We held three public information sessions and two public hearings during the public comment period. In total, we received more than 82,000 written and oral comments on the proposed rule and DSEIS.

In accordance with our policy, “Notice of Interagency Cooperative Policy for Peer Review in Endangered Species Act Activities” (59 FR 34270, July 1, 1994), and a recent memo updating the peer review policy for listing and recovery actions (August 22, 2016), we also sought the expert opinion of five appropriate independent specialists regarding the scientific data

and interpretations contained in the proposed rule. The purpose of such peer review is to ensure that we base our decision on scientifically sound data, assumptions, and analysis. This final rule incorporates and addresses comments received during the public comment and peer review processes.

For further information on the biology of the Mexican wolf, including its habitat use and lifecycle, the history of conservation and recovery efforts for this species under the ESA, and our legal and statutory framework (including the basis for our action), please see the proposed rule (86 FR 59953; October 29, 2021), which is available at <https://www.regulations.gov> in Docket No. FWS-R2-ES-2021-0103.

### **Rationale for Revisions to the Experimental Population Designation in Relation to Recovery**

Our revisions to the experimental population designation for the MWEPA contribute to the long-term conservation and recovery of the Mexican wolf by alleviating threats and achieving demographic and genetic management objectives that align with several of our recovery criteria for the Mexican wolf from the Mexican Wolf Recovery Plan, First Revision (USFWS 2017b, pp. 18–20) (“revised recovery plan”). The revised recovery plan was not available to serve as a foundation for the revisions to the MWEPA that we finalized in the 2015 10(j) rule (80 FR 2512, January 16, 2015, pp. 2514–2515). First, this rule revises the population objective established in the 2015 10(j) rule of 300 to 325 wolves. In this rule, we state that, based on end-of-year counts, we will manage to achieve and sustain a population average greater than or equal to 320 wolves in Arizona and New Mexico. This average must be achieved over an 8-year period, the population must exceed 320 Mexican wolves each of the last 3 years of the 8-

year period, and the annual population growth rate averaged over the 8-year period must demonstrate a stable or increasing population, as calculated by a geometric mean.

We estimate that when the MWEPA population reaches and maintains the revised population objective in this rule, the population will have a 90 percent likelihood of persistence over 100 years. We consider this level of persistence to demonstrate that demographic threats have been alleviated to an extent that is consistent with our recovery strategy and criteria for the Mexican wolf (USFWS 2017a, pp. 32–33, 35–36; USFWS 2017b, pp. 9, 11, 13, 18–22; Miller 2017, entire). Therefore, the revised population objective will contribute to the long-term conservation and recovery of the Mexican wolf because it will result in a population in which the threat of demographic stochasticity has been sufficiently ameliorated.

Second, this rule establishes a new genetic objective for the MWEPA. In this rule, we state that the USFWS and designated agencies will conduct a sufficient number of releases into the MWEPA from captivity to result in at least 22 released Mexican wolves surviving to breeding age.

We estimate that when the MWEPA population reaches the genetic objective, 90 percent of the gene diversity available in captivity will have been transferred to the MWEPA. We expect this infusion of available gene diversity to the MWEPA to alleviate the risk of genetic threats in the MWEPA such as inbreeding, lack of heterozygosity, and lack of adaptive potential, consistent with our recovery strategy and criteria for the Mexican wolf (USFWS 2017b, pp. 9, 11, 13–15, 18–20, 22–24). Therefore, the new genetic objective will contribute to the long-term conservation and recovery of the Mexican wolf by lessening or alleviating genetic threats.

Third, this rule temporarily restricts the use of three take provisions from the 2015 10(j) rule: take on Federal land, take on non-Federal land in conjunction with a removal action, and

take in response to an unacceptable impact to a wild ungulate herd. For take on Federal and non-Federal land, this rule states that until the USFWS has achieved the genetic objective by documenting that at least 22 released wolves have survived to breeding age in the MWEPA, the USFWS or a designated agency may issue permits only on a conditional, annual basis according to the following provisions: Either

1. Annual release benchmarks (for the purposes of this paragraph, the term “benchmark” means the minimum cumulative number of released wolves surviving to breeding age since January 1, 2016, as documented annually in March) have been achieved based on the following schedule:

Year	Benchmark
2021	7
2022	9
2023	11
2024	13
2025	14
2026	15
2027	16
2028	18
2029	20
2030	22

; or

2. Permitted take on non-Federal land, or on Federal land during the previous year (April 1 to March 31) did not include the lethal take of any released wolf or wolves that were or would have counted toward the genetic objective.

After the USFWS has achieved the new genetic objective described above, the conditional annual basis for issuing permits will no longer be in effect.

For the provision for take in response to an unacceptable impact to a wild ungulate herd, this rule states that no requests for take in response to unacceptable impacts to a wild ungulate

herd may be made by the State game and fish agency or accepted by the USFWS until the genetic objective has been met.

We expect the temporary restriction of three take provisions to reduce the take of released wolves during the near-term period in which we are trying to improve the gene diversity of the MWEPA because the Service will not issue take permits for take on Federal and non-Federal land unless conditional benchmarks toward recovery are met, or accept requests to take wolves in response to an unacceptable impact to a wild ungulate herd, until the genetic objective is met (USFWS 2022a, pp. 26–32, including table 2.1 on pp. 28–29). Reducing the take of released wolves will decrease the amount of time it takes to reach the genetic objective compared to not restricting these forms of take (USFWS 2022a, pp. 116–118). The growth of the MWEPA population in recent years necessitates a strong temporal focus on improving gene diversity in the near term because it will be more difficult to improve gene diversity and alleviate genetic threats at larger population sizes (USFWS 2017b, pp. 33–34).

The time period for the restriction of these three take provisions is based on our expectation that once the genetic objective is reached, the gene diversity of released wolves will have integrated into the population through breeding events between released and wild wolves such that released wolves will no longer represent a pool of unique gene diversity. In other words, as more released wolves survive and breed in the wild, the unique contribution of each released wolf to the gene diversity of the MWEPA diminishes. Because of this scenario, restricting these take provisions beyond the time at which we achieve the genetic objective would not result in the protection of unique gene diversity contributed by wolves released from captivity. Therefore, the short-term restriction of these three take provisions contributes to the long-term conservation and recovery of the Mexican wolf because the restriction will support

achieving the genetic objective, which will lessen genetic threats in the MWEPA consistent with our recovery strategy and criteria for the Mexican wolf as just described.

We note that the 2021 minimum population count of 196 wolves in the MWEPA demonstrates the sixth consecutive year of steady growth in recent years and that the population has doubled in size since 2015 (2015 minimum population count of 98 wolves) (USFWS files). With each continued year of positive population growth trajectory, the threat of demographic stochasticity in the MWEPA lessens. Inherent in our efforts to achieve the population objective is our recognition that Mexican wolf mortality from all sources, including human-caused mortality, must be sufficiently low to support population growth and persistence (USFWS 2017a, pp. 31–32; USFWS 2017b, pp. 20–22, 31–34). Therefore, the Service and our partners continue to monitor key demographic rates, balance our utilization of nonlethal and lethal management techniques to address conflict situations, and strengthen efforts to reduce the illegal killing of Mexican wolves (USFWS 2017b, pp. 31–34; USFWS 2019, entire; USFWS 2022b, pp. 30–42).

We note that as of April 1, 2022, we have documented 13 released wolves surviving to breeding age in the MWEPA that contribute to meeting the genetic objective. Also, over the last 4 years (2018–2021), we have seen a steady increase in gene diversity (from 74.54 to 76.23) and a decrease in mean kinship (a measure of the relatedness of individuals in a population to each other) (from 0.2546 to 0.2377), suggesting that our efforts to improve the genetic status of the population are beginning to exert a positive effect. As of August 17, 2021, both of these metrics are at their best values since 2010, when gene diversity measured 76.47 and mean kinship measured 0.235 (Scott et al. 2022, 2020, 2019; Siminski and Spevak 2011–2017; USFWS files). We expect to continue documenting the number of released wolves that survive to breeding age,

including their reproductive activity, and to track population-level genetic metrics to validate improvements in the genetic status of the population.

Additional discussion of our rationale for these revisions is provided in the proposed rule (86 FR 59953, October 29, 2021, pp. 59959–59963).

## **Experimental Population**

### *Location and Boundaries of the Experimental Population*

The Mexican wolf experimental population is located in the MWEPA, as designated in the 2015 10(j) rule (80 FR 2512, January 16, 2015, p. 2558). The boundaries of the MWEPA are the portions of Arizona and New Mexico that are south of Interstate Highway 40 (I-40) to the international border with Mexico (see map at 50 CFR 17.84(k)(4)). The boundaries of the MWEPA are consistent with the recovery strategy established in the revised recovery plan, and the MWEPA is wholly geographically separate from any nonexperimental populations of the same (sub)species, as described in the proposed rule (86 FR 59953, October 29, 2021, pp. 59963–59964).

### *Overview of the Experimental Population*

The MWEPA is a large area in Arizona and New Mexico that includes Federal, State, Tribal, and private land. It contains three management zones, Zone 1, Zone 2, and Zone 3, that provide areas for initial release, translocation, and occupancy of Mexican wolves (see definitions at 50 CFR 17.84(k)(3) and the map of the MWEPA designated area at 50 CFR 17.84(k)(4)).

### *Release Procedures*

The USFWS and our partners release Mexican wolves into the MWEPA using several different management strategies, including the cross-fostering of captive pups into wild dens as a form of initial release; the initial release of adults or sub-adults individually, as pairs with and

without pups, or as multigenerational packs; and translocations of wild wolves from one location to another. We intend to continue releasing Mexican wolves from captivity into the MWEPA primarily to increase the gene diversity of the experimental population as necessary to achieve our genetic objective and alleviate genetic threats to the population. In addition, we may release or translocate wolves for other management purposes such as replacing a mate for a breeding pair due to a wolf mortality or transferring wolves to Mexico. We provide additional detail about our release procedures in the proposed rule (86 FR 59953, October 29, 2021, p. 59964), including our procedures to utilize permanent identification marks and radio-collars to identify Mexican wolves in the MWEPA and differentiate them from wolves that may disperse from other gray wolf populations.

#### **How does the experimental population contribute to the conservation of the species?**

We intend to manage the MWEPA population to achieve the recovery criteria in the revised recovery plan for a population of Mexican wolves in the United States (USFWS 2017b, pp. 18–25; 86 FR 59953, October 29, 2021, p. 59965). The following information is summarized from our proposed rule, which can be referenced for additional supporting information (86 FR 59953, October 29, 2021, pp. 59965–59967).

#### *Possible Adverse Effects on Wild and Captive Breeding Populations*

Adverse effects on the captive population of Mexican wolves will not occur from the release of captive wolves to the MWEPA because the captive population is managed specifically to support the reintroduction of wolves to the wild and remains capable of supporting both the U.S. and Mexico reintroduction efforts through the release of surplus wolves (Scott et al. 2022, entire). Adverse effects to the wild population in Mexico will not occur because we do not rely on, nor have we conducted any, translocation of wolves from Mexico into the MWEPA.

### *Likelihood of Population Establishment and Survival*

The MWEPA has demonstrated that it is an established population with a high likelihood of survival. In particular, in the last 6 years under the management provisions of the 2015 10(j) rule, the population has grown steadily in size to its current minimum population size of 196 wolves. The Service's Mexican Wolf Recovery Program has transitioned from its previous focus on preventing the extinction of the Mexican wolf (USFWS 2010, p. 79) to pursuing a binational recovery strategy that we intend to achieve within two to three decades (USFWS 2017b, pp. 28–29).

### *Effects of the MWEPA Population on Recovery Efforts*

The MWEPA population contributes to the binational recovery of the Mexican wolf because it serves as the population that counts toward the recovery criteria in the revised recovery plan for a population in the United States. The revisions in this rule bring the management of the MWEPA into alignment with our recovery strategy and criteria for the Mexican wolf in the revised recovery plan to ensure that the experimental population contributes to the long-term conservation and recovery of the Mexican wolf.

### *Actions and Activities That May Affect the Introduced Population*

Consistent with our findings in the past (63 FR 1752, January 12, 1998, p. 1755; 80 FR 2512, January 16, 2015, p. 2551), we do not foresee that the introduced population will be adversely affected by existing or anticipated Federal or State actions or private activities because although some actions or activities may affect individual wolves, these effects will not hinder the growth or distribution of the population or its ability to achieve the demographic and genetic objectives established in this rule, as described in our proposed rule (86 FR 59953, October 29, 2021, p. 59966).

## **Experimental Population Regulation Requirements**

The following requirements are summarized or expanded upon from our discussion in the proposed rule (86 FR 59953, October 29, 2021, pp. 59967–59970):

### *Appropriate Means to Identify the Experimental Population*

The location of the experimental population is the MWEPA, as defined at 50 CFR 17.84(k). We can identify Mexican wolves based on the permanent identification marks we give them prior to release, by radio collar, DNA analysis, or visual observation.

### *Is the experimental population essential to the continued existence of the species in the wild?*

Essential experimental populations are those whose loss would be likely to appreciably reduce the likelihood of survival of the species in the wild (50 CFR 17.80(b)). The Service defines “survival” as the condition in which a species continues to exist in the future while retaining the potential for recovery (USFWS and NMFS 1998, p. xix). Inherent in the definition of “essential” is the effect the potential loss of the experimental population would have on the species (49 FR 33885, August 27, 1984, p. 49 FR 33890).

The ESA states that, prior to any release, the Secretary must find by regulation that such release will further the conservation of the species (16 U.S.C. 1539(j)(2)). Reintroductions are, by their nature, experiments, the fate of which is uncertain. However, it is always our goal for reintroductions to be successful and contribute to recovery. The importance of reintroductions to recovery does not necessarily mean these populations are “essential” under section 10(j) of the ESA. In fact, Congress’ expectation was that “in most cases, experimental populations will not be essential” (H.R. Conference Report No. 835, supra at 34). The preamble to our August 27, 1984, final rule reflects this understanding, stating that an essential population will be a special case and not the general rule (49 FR 33885, August 27, 1984, p. 49 FR 33888).

When the Service published the final rule for the MWEPA designation in 1998, we did not anticipate making another essentiality determination for the MWEPA in the future. However, the remand of the 2015 10(j) rule requires the Service to make a fresh essentiality determination because the geographic expansion of the MWEPA results in wolves occupying new areas that were not contemplated for wolf occupancy during the original essentiality determination. At the time of the original determination, we found the experimental population to be “nonessential” because the captive population provided a secure source of surplus animals for reintroduction and the primary repository of genetic material for the species; therefore, if the reintroduced wolves did not survive, additional reintroduction efforts could be taken if the reasons for failure were understood (63 FR 1752, January 12, 1998, p. 1754).

This rule determines that the experimental population in the MWEPA, as defined by the geographic revision and expansion of the MWEPA in the 2015 10(j) rule, is not essential to the continued existence of the Mexican wolf in the wild under section 10(j) of the ESA. We reference our proposed determination (86 FR 59953, October 29, 2021, pp. 59967–59969), and offer the following rationale to clarify the information we relied on in our determination.

Mexican wolves currently occur in two locations in the wild: in the MWEPA in the United States, and in the Sierra Madre Occidental in northern Mexico, where the population numbers around 45 wolves in 2022. Reintroduction efforts in Mexico have been underway for over a decade, demonstrating sustained effort to establish and manage a wild population that contributes to recovery under the ESA. Mexico continues to focus on releasing wolves to the wild (from captivity or translocated from the MWEPA) and monitor natural population growth and expansion toward achieving the recovery criteria in the revised recovery plan. If the Mexican wolf population in the MWEPA were lost, Mexican wolves would continue to persist in the wild

with Federal legal protection from Mexico. Thus, the existence of a protected wild population outside of the MWEPA is one of the factors in our determination that the experimental population is not essential to the continued existence of the Mexican wolf in the wild.

The second, and equally important, factor in our determination is our expectation that we could restart a population in the MWEPA or elsewhere in suitable habitat in the United States if the unexpected loss of the MWEPA were to occur. Our expectation is supported by our history—that is, the experiment to reintroduce Mexican wolves to the wild, which we began in 1998 as part of the species recovery effort under section 10(j) of the ESA, has demonstrated success and is repeatable. Several pieces of information influence our expectation that a future re-introduction is feasible and, therefore, support a nonessential determination, including the following:

If the unexpected loss of the MWEPA population were to occur, the Service and our partners have the knowledge and logistical capability to re-start the population and manage it to contribute to the long-term conservation and recovery of the Mexican wolf. To start, the Mexican wolf is a well-known subspecies for which we have gained first-hand biological and ecological knowledge for more than two decades. We have observed, monitored, and analyzed wolves' natural behavior in the wild such as the establishment of territories, dispersal, reproduction, survival, and mortality. We have reported our findings throughout the course of the reintroduction and recovery effort, including program reviews (Paquet et al. 2001, entire; AMOC and IFT 2005, entire), recovery plans (USFWS 1982; USFWS 2017a; USFWS 2017b), regulatory documents (e.g., 80 FR 2488, January 16, 2015; 80 FR 2512, January 16, 2015), environmental impact statements (USFWS 1996, entire; USFWS 2014, entire; USFWS 2022a, entire), and annual progress reports covering every year of the reintroduction (USFWS files). In

addition, significant scientific research has been conducted regarding many facets of Mexican wolf biology and ecology (e.g., Parsons and Nicholopoulos 1995, entire; Hedrick et al. 1997, entire; Reed et al. 2006, entire; Asa et al. 2007, entire). Because of our experience establishing and maintaining a population and the extent of supporting biological information available, we understand the needs of this subspecies sufficiently to undertake another reintroduction.

In addition, since 1998, we have learned about the communities in which the reintroduction and recovery effort takes place. Within this context, we have demonstrated our ability to explore solutions to a variety of challenges and to adaptively manage the reintroduction effort. We have:

- Tested and utilized different wolf release techniques, including hard and soft releases; release of adults, pairs, or packs; and cross-fostering puppies;
- Adapted our response to conflicts based on the demographic status of the experimental population and the needs of local communities, including our use of management tools such as translocations, removals, and novel nonlethal techniques;
- Provided animal husbandry in captive, semi-captive, and wild settings, including vaccination protocols to reduce the risk of diseases in Mexican wolves or the transfer of diseases to humans;
- Developed and expanded collaborative recovery efforts with partners in both the United States and Mexico;
- Sustained budgetary and staffing capacity for the reintroduction effort for several decades, including public outreach programs and stakeholder engagement;
- Championed and participated in financial programs to reduce economic impacts on livestock operators; and

- Adjusted the regulatory, policy, and guidance frameworks that provide the structure for the reintroduction and recovery effort.

Therefore, we have the capability to construct a management approach for a new reintroduction (again, assuming understanding of the reasons for the loss of the current population) and adjust it as necessary to support the release, establishment, growth, vigor, and maintenance of an experimental population within a human-dominated landscape. Specifically, we expect to release packs, pairs, and individual animals over several years to re-establish the population as appropriate to the circumstances. While the release of adult wolves is not currently our preferred release strategy, we recognize that the release of adult wolves would be necessary and appropriate if we were restarting a reintroduction, and we would work with our partners to select preferred release sites. We do not expect to achieve a population of the current size (close to 200 wolves) within the first few years, but rather seek to establish a base of released wolves representative of the gene diversity available in captivity. We will continue releases as necessary and, with our partners, support the natural growth and expansion of the population through the use of a variety of adaptive management strategies and tools such as those we have utilized since the reintroduction began.

If we were to conduct a new reintroduction due to the loss of the current population, we would rely on the availability of captive Mexican wolves for release to the wild. Therefore, the capability of the captive breeding program to provide wolves to re-start the population and provide long-term support of the reintroduction over at least several decades is an important factor in our essentiality determination. Our assessment of the capability of the captive breeding program rests first on the mission of the Mexican Wolf Species Survival Program (“SSP”), which is to support the reestablishment of the Mexican wolf in the wild through captive

breeding, public education, and research. The dedication of this program to reestablishment supports our expectation that participating facilities will support and engage in the new reintroduction effort (Scott 2022, pers. comm.). Second, the logistical capacity of the captive breeding program has increased significantly since 1998, such that it is more capable of producing surplus wolves for release to the wild today than it was when we first designated the MWEPA over two decades ago. In 2021, the captive program housed 387 wolves in 62 facilities (Scott et al. 2022, p. 7), compared to fewer than 200 wolves in less than 50 facilities in 1998. The physical capacity of the captive breeding program could continue to expand with the addition of new facilities, which would further increase the number of surplus wolves produced as well as benefitting ongoing genetic management needs (Scott et al. 2022, p. 10). In addition to its expanded physical capacity, the SSP has benefitted from over four decades of husbandry experience and research across many participating institutions, again supporting our contention that the captive breeding program has the capacity and capability to re-start and sustain support for a wild population.

Importantly, one question that is central to the potential to restart a reintroduction of the Mexican wolf in the future is whether surplus wolves produced by the SSP would have sufficient gene diversity to establish a genetically robust population. This concern stems from the slow loss of gene diversity that has occurred, and will continue to occur, in the captive population because no new founders are available to add diversity (Scott et al. 2022, pp. 9–10). This is a difficult question to answer because a finite threshold of gene diversity below which reintroduction would not be possible for Mexican wolves has not been defined or observed by the Service, the SSP, or other researchers. In other words, we recognize that re-starting a reintroduction at some point in the future when the captive population has lower gene diversity than its current level (Scott et al.

2022, p. 9) means that genetic concerns will be amplified more than they are today, but that does not equate to infeasibility. Rather, surplus wolves would be available to release to the wild that would still represent the available gene diversity remaining from the founding wolves and the three integrated captive lineages. In fact, a population could be restarted today that would potentially be equally or more genetically diverse with lower overall mean kinship and better representation of the three Mexican wolf lineages than the first reintroduction effort simply by the selection of different wolves and different management strategies in the wild when the population was small. In addition, genetic management strategies, such as an expansion of the number of breeding pairs in the captive population (Scott et al. 2022, p. 10), the use of stored genetic material from captive wolves (such as frozen semen and oocytes (Scott et al. 2022, appendix 9, pp. 82–85)), or the use of other novel reproductive or genetic technologies, could be used to slow the loss of gene diversity in captivity over time and offer robust future reintroduction scenarios with appropriately diverse surplus wolves.

As we have discussed throughout this rule, we expect the MWEPA to further the conservation and recovery of the Mexican wolf by contributing to the persistence of a population that achieves specific recovery goals for the subspecies. However, we consider the MWEPA nonessential because the loss of all reintroduced Mexican wolves within the MWEPA is not likely to appreciably reduce the likelihood of survival of the subspecies in the wild. Our determination is based on the existence of a second wild population of Mexican wolves, our increased capability to initiate and maintain a reintroduced population of Mexican wolves, and the ongoing maintenance of the captive population.

*Management Restrictions, Protective Measures, and Other Special Management*

We have developed a section 10(a)(1)(A) permit under section 10 of the ESA to allow for certain activities with Mexican wolves that occur both inside and outside the MWEPA. If Mexican wolves travel outside the MWEPA, we intend to capture and return them to the MWEPA or place them in captivity. This approach is consistent with the revised recovery plan, which directs Mexican wolf recovery south of Interstate Highway 40 (I-40) in Arizona and New Mexico. Mexican wolves are managed south of I-40 under this rule, which provides management flexibility and contributes to the conservation and recovery of the Mexican wolf. Mexican wolves that move outside of the geographic boundaries of the MWEPA are fully endangered and the allowable forms of take provided for in this rule to address conflict situations are not available. Livestock operators and the public cannot haze or harass wolves outside of the MWEPA without violating the ESA.

#### *Review and Evaluation of the MWEPA Population*

As described at more length in our October 29, 2021, proposed rule, the following evaluations of the MWEPA population and the rangewide progress of the Mexican wolf toward recovery will be forthcoming:

- Evaluation of this revised rule 5 years after rule implementation begins (i.e., one evaluation based on data through the 2027 annual population count, synchronized with the 2027 recovery plan evaluation, below, for publication in 2028);
- MWEPA quarterly reports (i.e., four reports per year, annually, ongoing);
- MWEPA annual reports (i.e., one report per year, annually, ongoing);
- 5-year status evaluations of the Mexican wolf subspecies pursuant to section 4(c)(2) of the ESA (i.e., one report every 5 years, with next evaluations occurring in 2023 and 2028, ongoing);

- 5- and 10-year recovery progress evaluations, pursuant to the revised recovery plan (i.e., one report for each evaluation, using data through 2022 and 2027, with publication in 2023 and 2028, respectively); and
- A phasing evaluation for western Arizona pursuant to 50 CFR 17.84(k)(9)(iv)(D) (i.e., one evaluation in 2023).

*Consultation with State Game and Fish Agencies, Local Governments, Tribes, Federal Agencies, and Private Landowners in Developing and Implementing This Rule*

In accordance with 50 CFR 17.81(d), to the maximum extent practicable, this rule represents an agreement between the USFWS, the affected State and Federal agencies, and persons holding any interest in land that may be affected by the establishment of this experimental population. In addition to the information provided in the proposed rule (86 FR 59953, October 29, 2021, p. 59970), we also describe our coordination and consultation efforts in the final supplemental environmental impact statement (FSEIS) (USFWS 2022a, pp. 164–166).

### **Summary of Comments and Recommendations**

From April 15 to June 15, 2020, we conducted a public scoping process under the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) based on our intent to modify the 2015 final 10(j) rule (see 85 FR 20967, April 15, 2020). We received more than 87,000 public comments during scoping. We responded to these comments in the draft supplemental environmental impact statement (DSEIS), appendix G (USFWS 2021, pp. 182–227). We subsequently opened a 90-day public comment period on the proposed 10(j) rule and DSEIS on October 29, 2021 (86 FR 59953). During the public comment period, we held three public information sessions and two public hearings; approximately 400 members of the public

attended and participated in these events. We received more than 82,000 public written and oral comments during the comment period. In total, we received more than 169,000 comment submissions over the course of the two comment periods.

As part of this rulemaking, we have carefully reviewed the requirements of NEPA and its regulations (Council on Environmental Quality regulations at 40 CFR 1502.9); this final rule, as well as the process by which it was developed and finalized, complies with all provisions of the ESA, NEPA, and applicable regulations. We identified public comments specific to the NEPA process and provided responses to these issues in the FSEIS rather than in this rule; in addition, we carried the scoping comments and responses forward from the DSEIS to the FSEIS because the scoping comments and responses addressed a number of issues that were brought up subsequently during the public comment period on the DSEIS and proposed rule (USFWS 2022a, pp. 188–240). In a few cases, a comment was equally pertinent to the rule as well as the FSEIS, in which case we have included our response in this rule as well.

Below, we provide synthesized, substantive comments pertinent to the rulemaking and our responses. We considered substantive comments to be those that provided information relevant to our requested action such as data, pertinent anecdotal information, or opinions backed by relevant experience or information, and literature citations. Due to the similarity of many comments, we combined multiple comments into a single, synthesized comment for many issues. We considered non-substantive those comments that expressed a statement or opinion without providing supporting information or relevance; restated data or information that we already have but without an alternate perspective to consider; restated elements of the March 31, 2018, order; or were beyond the scope of our proposed revisions as defined during scoping. Comments from peer reviewers, Federal agencies, and State agencies are grouped separately. Comments from

local governments are included in the general public comments. We did not receive any comments from Native American Tribes. All substantive information provided during the comment periods, including the public hearings, has either been incorporated directly into this final determination or is addressed below.

#### *Peer Reviewer Comments*

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited and received expert opinions from five knowledgeable individuals with expertise that included a Doctor of Philosophy degree (Ph.D.) or Master of Science degree (M.S.) with significant experience in wildlife ecology or a related field; expert knowledge of wildlife biology and management, demographic management of mammals (especially carnivores), population modeling, small population management, genetics of small populations, captive breeding and reintroduction of a species to the wild, scientific literature on wolves or other carnivores, and/or human dimensions or socioeconomic considerations related to large carnivore management; and prior experience as a peer reviewer for scientific publications.

We asked peer reviewers to respond to seven scientific questions regarding the proposed revision to the regulations for the experimental population designation of the Mexican wolf, as appropriate to their expertise, in addition to providing their general review. We reviewed all peer review comments that we received. Below, we provide a summary of the peer reviewers' answers to our seven questions, as well as our responses to singular issues raised by peer reviewers that we consider having particular bearing on our ability to support the final rule with the best available information. In addition to the summary and responses below, we have incorporated their information and recommendations into this final rule as appropriate.

- 1. A 10(j) rule may provide flexibility for managing a reintroduced species but must*

*foremost further the conservation of the species. Does the balance of the proposed rule, in total, contribute to the conservation and recovery of the Mexican wolf?*

Four peer reviewers answered this question. One peer reviewer did not think the proposed rule, in total, contributes to the conservation and recovery of the Mexican wolf. This reviewer stated that the proposed rule relies heavily on Mexico and private entities to contribute to recovery, and that designating and managing the population as nonessential is a high-risk approach. One reviewer agreed that the proposed rule would contribute to the conservation and recovery of the Mexican wolf, but identified concerns with the methodologies used to depict the population's trajectory and to measure gene diversity, and also identified the need for additional clarity related to allowable forms of take outside of the MWEPA, the relationship between the proposed restricted forms of take and illegal take, and whether the program's human-wolf conflict measures are effective in reducing illegal take. Another reviewer agreed that all of the proposed revisions would contribute to the conservation and recovery of the Mexican wolf and cited recent population growth and the use of supplemental feeding and cross-fostering techniques as indications of, or contributing factors in, the Service's recent progress toward demographic and genetic recovery goals. The fourth reviewer responded that in total the proposed rule would contribute to the conservation and recovery of the Mexican wolf but caveated that "contribute to" is not synonymous with "ensure."

*2. Are the expected effects of the proposed revisions on the overall biological status of the experimental population adequately described and supported by relevant analysis? If not, what information is missing and how is it relevant?*

One reviewer stated that the population viability analysis in the revised recovery plan relied on by the Service as the foundation for establishing the proposed population and genetic

objectives is likely very robust for predicting population growth at low population densities. However, this reviewer suggested updating the model in 5 to 10 years with updated vital rates and incorporating density-dependent effects to address the potential for the model to underestimate extinction probabilities and overestimate genetic diversity in the long term, because the data used in the population viability model (Miller 2017, entire) may overestimate the proportion of females breeding and do not include a link between density and reproduction. This same reviewer also cautioned that removal of wild-born wolves could impact gene diversity if those wolves had advantageous mutations.

Another reviewer stated that the proposed population objective is an improvement from the population objective in the 2015 10(j) rule and provided critique that the program's current methodology to document minimum population size annually may not provide an accurate and precise population estimate against which to measure progress toward the proposed population objective.

A third reviewer responded to this question by reiterating a concern that the methodology used to document the minimum population size may be inadequate to determine whether the population's growth rate is stable or increasing, as necessitated by the proposed population objective. This reviewer provided recommendations on several methodologies and statistical models to estimate survival or other demographic parameters for the Service to consider and stated support for updating the population viability model used in the revised recovery plan during the 5-year evaluation of the recovery plan. The reviewer also questioned how the Service arrived at the genetic objective of 22 released wolves surviving to breeding age based on the population viability model in the revised recovery plan and cautioned against using model results as actual targets rather than as guideposts. This reviewer suggested that measuring genetic

variation would be a more appropriate method to assess genetic diversity in the MWEPA than counting the number of released wolves that survive to breeding age. The reviewer discussed inbreeding and reduced fitness in Mexican wolves and suggested that allowing Mexican wolves to hybridize with other wolf ecotypes (gray wolves from other populations) may contribute to the future adaptive potential of the Mexican wolf.

The fourth reviewer stated that each of the proposed revisions should have a positive impact on population performance and that the expected effects of the revisions are adequately described, noting that the removal of an upper target for abundance is particularly important for long-term sustainability of the Mexican wolf. This reviewer noted that the inclusion of more than 15 years of Mexican wolf data in the population viability model and the selection of conservative values for model parameters add significant confidence to the model's predictive power for demographic and genetic uses. The reviewer noted that the habitat modeling by Martínez-Meyer et al. (2017) also substantively informs recovery efforts, while noting that updating the habitat model over time with information on population performance could address general concerns related to the reliability of habitat quality assessments that rely solely on presence data. This reviewer questioned why the Service did not use a direct measure of genetic diversity as a genetic objective and stated that the Service overstated the future conditions of the population in response to released wolves surviving to breeding age.

*3. Does the proposed rule, including the allowable forms of take, allow for the experimental population to achieve the demographic recovery criterion for the United States in the Mexican Wolf Recovery Plan, First Revision (2017)?*

One reviewer stated that the proposed rule does not allow for the experimental population to achieve the demographic recovery criterion because there is no numerical trigger to determine

when different allowable forms of take are permitted. Another reviewer stated that the proposed reduction in take would have a positive effect on Mexican wolf recovery but would not address the problem of illegal take, which accounts for the majority of human-caused mortality for the Mexican wolf. This reviewer recommended using a “similarity of appearance” listing for coyotes within the MWEPA under section 4(e) of the ESA. A third reviewer stated that they believe the proposed rule would contribute to achieving the recovery criterion in the revised recovery plan based on the recent annual increases in the MWEPA population, the Service’s ongoing efforts to reduce conflict and increase support for the recovery effort, and the removal of the upper threshold on wolf abundance.

*4. Does the proposed rule, including the allowable forms of take, allow for the experimental population to achieve the genetic recovery criterion for the United States in the Mexican Wolf Recovery Plan, First Revision (2017)?*

One reviewer stated that the proposed revisions to the allowable forms of take may not avoid the potential for negative impacts to genetic diversity because the revisions consider only released wolves, they do not consider wild-born wolves with new genetic mutations that may be important to the population’s genetic diversity, especially its heterozygosity. Another reviewer restated concern for whether the proposed genetic objective is valid compared to other ways to measure the genetic status of the population. A third reviewer did not mention the effect of the take provisions on the ability of the proposed rule to achieve the genetic criterion beyond a general statement acknowledging the Service’s efforts through memoranda of understanding (MOUs), education/outreach, and diversionary feeding to reduce conflicts that could lead to wolf removals. This reviewer stated that the success of cross-fostering also provides evidence that the genetic criterion will be met. This reviewer reiterated concern that the genetic objective is not a

direct measure of genetic health but stated that the genetic objective will likely lead to the genetic benefits the Service is expecting and is easy to quantify and measure.

*5. Is the information, data, and analysis we provide to substantiate our essentiality determination based on the best available science? Is there scientific information or data that we did not include in our essentiality determination that is relevant and should be considered?*

One reviewer stated that the logic behind designating the MWEPA as nonessential is not well supported and is a high-risk approach due to the other wild population occurring in Mexico and the captive population being run by private entities that are not legally bound to recover the Mexican wolf. Another reviewer agreed that the MWEPA population could likely be restarted from captivity but suggested the Service consider an essentiality designation because the growth of the second wild population of Mexican wolves in Mexico has been fairly stagnant and the reintroduction effort is very expensive. This reviewer also questioned whether the nonessential determination limits the ability of the Service to reintroduce the Mexican wolf outside of its historical range. A third reviewer communicated their impression that the concept of essentiality is convoluted and ambiguous, and that the Service was unclear in its discussion whether we were referring to the subspecies at-large or the Mexican wolf in the wild. This reviewer stated that given the emphasis on the “three Rs” (resilience, representation, and redundancy) in the recovery of the Mexican wolf, considering the MWEPA as nonessential to the persistence of wild wolves seems tenuous, although according to strict legal definitions may be true.

*6. Do the proposed revisions, and the rule as a whole, allow for flexible and responsive management of conflict situations that can address local community concerns related to social and economic impacts while still providing for the conservation and recovery of the Mexican wolf?*

One reviewer stated that the rule allows for flexible and response management of conflict situations but may not adequately provide for the conservation and recovery of the Mexican wolf. Another reviewer stated that the management activities provided for in the rule are generally consistent with recommendations from the literature on reducing wildlife conflicts to support conservation. This reviewer stated that the scientific literature contains mixed evidence as to how depredation compensation rates should be determined, with some literature suggesting that full compensation reduces incentives for producers to undertake proactive measures to reduce conflicts and therefore may lead to more depredations, while other literature suggests that additional indirect costs should be incorporated to fully compensate losses. A third reviewer stated that the conflict management efforts appear to be comprehensive, and an evaluation may assist in determining which components of the program are most effective. The fourth reviewer stated that the answer to the question is values-based and therefore difficult to predict. This reviewer gave the example that the rule may make demonstrable progress toward reestablishing Mexican wolves but still may not satisfy certain stakeholders. However, this reviewer stated that, collectively, the proposed revisions and the rule would allow for flexible and responsive management to address conflicts, further stating that the rule clearly attempts to minimize significant impacts and to produce realistic predictions for various expenses, recognizes the need for adaptive management and maintaining broad support for recovery efforts, and demonstrates continued effort to pursue funding and partnerships to ensure the overall success of the program.

*7. Is the rule based on the best available biological and social science? Are there demonstrable errors of fact or interpretation of data or scientific information in the proposed rule?*

One reviewer stated that using a geometric mean, rather than the arithmetic mean, would better capture population performance in the demographic recovery criterion and population objective. Another reviewer provided recommendations on new analytical methods to evaluate data that could lead to improved inferences and management decisions.

Several reviewers commented on the proposed nonessential designation. One reviewer stated that reliance on a captive population to replenish wild populations after an extinction event does not represent the survival of the species in the wild or recovery across ecologically and geographically diverse areas in the subspecies' range, as recommended in the recovery strategy in the revised recovery plan. This reviewer further cautioned that the proposed rule considers wolves in captive-breeding facilities and in Mexico to be "populations," but this is a very high-risk approach because private facility participation in captive breeding is voluntary (facilities are not legally bound to recover Mexican wolves), and the Mexican government is not bound to U.S. law. Additionally, this commenter stated that more than 90 percent of the remaining wild Mexican wolves inhabit the MWEPA, and it is likely that new genetic mutations have emerged, providing an evolutionary avenue for locally adapted Mexican wolves. Because these alleles do not exist in the captive population or in Mexico's population, the reviewer considers the MWEPA essential.

One reviewer stated that while there were no observable errors of fact or interpretation with the social science data or literature presented by the Service, there is additional literature related to cattle prices, indirect effects from livestock depredations, and management costs that may have relevance for the determination of economic impacts of the proposed revisions. This reviewer provided specific examples of cattle price variability to highlight the variation in economic impacts experienced by an individual producer from a depredation and the

management decisions that follow. This reviewer also provided information about the potential indirect economic effects of depredations and noted that the Service had accounted for some, but not all, possible indirect effects in its analysis, while also noting that a systematic accounting of all possible indirect effects is not available in the literature. The reviewer stated that there is insufficient evidence to establish the extent of indirect effects. The reviewer also provided examples of management costs associated with depredation activity, including fence maintenance and repair from livestock prone-to-flight behavior, veterinary costs of injured animals, and other management interventions such as herding dogs and additional riders to check herds.

Another reviewer stated that the proposed rule is arguably based on the best available science, although that does not mean there may not be debate in the scientific community over the choice of models, data to populate them, statistical evaluations, and interpretation of results. This reviewer clarified that no single issue or issues collectively mentioned by the reviewer would result in the inability to achieve recovery. This reviewer suggested the Service add a description of our annual count methods because that is how the Service will assess progress toward the population objective, recommended that the Service conduct a cost-benefit analysis of diversionary feeding related to effective law enforcement levels or other actions, and questioned whether the potential impacts of the border wall on Mexican wolf recovery, other than on the probability of wolf dispersal across the border, were considered.

#### *Specific Peer Review Comments*

*Comment:* The MWEPA population estimates are based on an ad hoc estimation approach (USFWS 2019, pp. 21–22) and these point estimates are used to depict population

trajectory and estimate population growth rate. There is no measure of the precision of the estimates; this could influence estimates of extinction risk.

*Our response:* We conduct an annual population minimum count in the MWEPA. Our methods for conducting these counts have been consistent since 2008, and thus should be comparable over time and reflect the population trend. The minimum counts represent wolves and/or wolf sign observed between November and early February each year. Because we utilize a minimum count, we consider our results to serve as a conservative population estimate (i.e., the true population is above the reported count). Thus, extinction risk is appropriately conservative and may be slightly overestimated based on utilizing minimum counts. For small populations of mammals, population counts are likely the best method; however, we also recognize that research is appropriate at this stage of the MWEPA reintroduction (196+ wolves) to determine appropriate population estimate methods in the future for a larger population of wolves (i.e., more than 300).

*Comment:* MWEPA population estimates are essentially point estimates of the “minimum number known alive,” and their validity, as actual population estimates, is dependent on whether the probability of detection each year remains constant. These counts are an index of population size, yet they are used to estimate population growth rate, but there are two issues here. As mentioned, it is not known if the probability of detection between years is constant (in this case it is assumed), and there is no measure of precision around the count, so whether the count of population size between years actually differs is obscured.

*Our response:* See our response above. In addition, for small populations of mammals that are hard to detect through sightability models or double counts from the air (e.g., wolves avoid detection from helicopters by simply not moving, and it is only through radio telemetry

that we are able to find collared wolves or the uncollared wolves associated with them), minimum population counts are likely the best method to determine or estimate population size. We have had very limited success attempting to grid areas with helicopters to detect wolves without radio telemetry, even with food caches placed in areas of known wolf occupancy. Thus, we rely on tracks, scats, and remote cameras to document uncollared packs.

*Comment:* Population estimates are made at the end of the year and include all age classes; the number of adult and subadult wolves should be presented separate from the number of pups surviving until the end of the year.

*Our response:* We document the number of pups surviving until the end of the year during our annual population count. We are currently updating the content and format of our annual reports (for 2021 and subsequent years) and will consider providing this information in future annual reports.

*Comment:* The genetic objective of releasing 22 wolves does not ensure that these wolves actually breed and contribute their allelic diversity to the wild. Despite the realistic probabilities used to predict the success of released wolves contributing their genes to the population, they are still just predictions and should be stated as such.

*Our response:* We have clarified our language to describe the future conditions of the population where they are speculative.

*Comment:* The continued monitoring of the genetic variation present in the wild Mexican wolf populations would be a more appropriate method to assess genetic diversity and its erosion over time, compared to assuming that when a certain number of wolves reaches breeding age they will mate, their offspring will survive and reproduce, and genetic diversity will be maintained.

*Our response:* The genetic objective we are establishing serves as an indicator that we have transferred a large degree of the gene diversity available in captivity to the wild population. Our genetic monitoring will continue to include multiple components, including the number of released wolves surviving to breeding age and their reproductive success when known, as well as genetic metrics for the population such as gene diversity and mean kinship. As stated in our responses above, we recognize that we need to adapt our current genetic and population monitoring strategies in the near future to address logistical issues associated with monitoring a growing population and ensuring our methods continue to produce reliable estimates to track progress toward recovery. We are beginning to explore different monitoring schemes and will discuss relevant findings or decisions in upcoming program reviews.

*Comment:* Permitting or facilitating adaptive introgression may be necessary to ensure the adaptive potential of the MWEPA population. Is the Service planning an introgression zone between gray wolves in Colorado and Mexican wolves?

*Our response:* Genetic monitoring of the MWEPA population will continue to be necessary to ensure that genetic threats to the Mexican wolf are lessened and alleviated. We currently collect and report genetic data on individual wolves and the population based on the known pedigrees of collared wolves and blood and scat samples taken in the field; as explained in our responses above, we expect to modify our genetic monitoring scheme over time. We recognize adaptive introgression can be a useful genetic tool in certain situations. At the current time, the Service does not have any intention to initiate or allow adaptive introgression between gray wolves and Mexican wolves as part of our genetic management of Mexican wolves. As of April 2022, Colorado Parks and Wildlife has not solidified its gray wolf reintroduction strategy; therefore, it is difficult to determine the timing and extent of future dispersal contact that may

occur between gray wolves and Mexican wolves or the potential genetic effect of this contact on Mexican wolves. As more information becomes available, we will consider the implications in our management and monitoring strategies.

*Comment:* Where did the policy of releasing 22 wolves that attain breeding age, which are then assumed to contribute allelic diversity to the wild population, originate from?

*Our response:* Miller (2017) explored various population viability scenarios that demonstrated that 22 released wolves surviving to breeding age, with some portion of surviving animals breeding, would achieve representation in the wild of 90 percent of the gene diversity available in captivity (see table 16 in Miller 2017). Specifically, the “[EISx2]” scenarios resulted in gene diversity retention relative to the SSP for the MWEPA of 0.897–0.901, which is effective in achieving the Service’s objective to ensure the wild population represents 90 percent of the gene diversity in captivity.

*Comment:* It appears that inbreeding depression or reduced fitness is likely occurring in the MWEPA. A reanalysis of data that explores the effect of the inbreeding coefficient of wild pairs on whether they successfully produce a litter, on litter size, and pup survival is warranted with a more up-to-date dataset (1998 to 2021).

*Our response:* The Service agrees that reanalysis of inbreeding depression will be a necessary task during the recovery of the Mexican wolf. We will consider a reanalysis of inbreeding depression during the 5- or 10-year recovery plan evaluations in order to guide the ongoing recovery effort; however, we have not solidified our plans for the evaluations at this time. The inbreeding analysis conducted in association with the revised recovery plan and supporting biological report (USFWS 2017b, p. 33 and appendix C) is based on the largest, most comprehensive, and up-to-date data set available (89 litters over 16 years). It suggests

that inbreeding may affect the probability of producing a litter but is not significantly affecting litter size, as previously thought (Fredrickson et al. 2007).

*Comment:* Illegal take of Mexican wolves has been high, particularly in the last decade. Although there is a comprehensive human-wolf conflict management program in place, its effectiveness or relation to allowable forms of take is not clear; will restricting forms of legal take reduce illegal take?

*Our response:* We have not conducted a formal assessment of our human-wolf conflict management strategies at this time to determine their individual efficacy in reducing human-caused mortality of Mexican wolves. The purpose of the take restrictions in this rule is to ensure that the management flexibility authorized in the MWEPA supports the long-term conservation and recovery of the Mexican wolf, and that the likelihood of take is reduced during conflict situations in which other management options are available. We note that we are currently revising the revised recovery plan to diversify and strengthen the recommended actions the Service and our partners may implement to reduce human-caused mortality. We will assess the efficacy of our efforts to reduce human-caused mortality in the 5-year review of the revised recovery plan in 2023.

*Comment:* Under section 4(e) of the ESA (“Similarity of Appearance Cases”), the Secretary of the Interior can deem another species as endangered or threatened if that species is so similar in appearance that curtailing take of that species would help conserve the endangered species. In this case, preventing take of coyotes (*Canis latrans*), which can be confused with the Mexican wolf, may help curtail illegal take of wolves.

*Our response:* A section 4(e) “similarity of appearance” listing would be a separate regulatory action under the ESA and is therefore beyond the purview of this rule.

*Comment:* Cross-fostering and supplemental feeding appear critical to achieving genetic goals. Carroll et al. (2019) argued that supplemental feeding could mask the effects of inbreeding; however, relevant field data indicate survival of wolf pups that are supplementally fed is likely enhanced and this methodology will likely increase the rate at which 22 individuals are integrated into the population.

*Our response:* We agree. We supplementally feed most packs (a few packs are logistically too difficult to feed) that have cross-fostered pups to increase the likelihood that cross-fostered pups survive.

*Comment:* Carroll et al. (2019) criticized the population viability model for maintaining a long-term reliance on supplemental feeding because it provided a demographic boost that was important in achieving demographic goals, but Miller (2017) also demonstrated that if ultimately it is determined that supplemental feeding is inappropriate, there are other ways to maintain growth in the wolf population (e.g., boosting adult survival).

*Our response:* We agree. We are committed to maintaining the growth of the Mexican wolf population until we reach our recovery goals through a variety of management actions; we expect to reduce supplemental or diversionary feeding in the future as we scale back management support of the population in association with meeting recovery goals and documenting that threats have been alleviated.

*Comment:* The population viability model (Miller 2017) did not include density dependence or a link between density and reproduction. The model results may be reliable for near-term population projections (5 to 10 years) but likely underestimate extinction probabilities and overestimate genetic diversity in the long term, because they overestimate effective population size from too many breeding females. The population viability model could be

revised in the future by updating the vital rates populating the model and including density-dependent effects and group sizes, particularly if density increases.

*Our response:* Miller (2017) did not include density-dependent reproduction in the model because there is no scientific evidence supporting a link between the number of pups born, their survival, and population density (p. 6). The model did include a density-dependent mortality function but acknowledged that Mexican wolf density in the MWEPA is low enough that density-dependent effects on mortality are not likely to occur (ibid, p. 7). We intend to revisit the population viability model in the future and will investigate data for any demonstrable changes from previous projections. For instance, we have observed higher annual growth rates than predicted by the model.

*Comment:* The proposed rule states that if no released wolves were removed during the prior year, then any removals that were conducted would not negatively impact gene diversity. This may not be true. It depends on which wolves are removed; for example, removing diverse wild-born individuals could have a negative effect on gene diversity if those wolves have new, advantageous mutations.

*Our response:* We understand the perspective offered by the reviewer but consider it important to recognize that we may not always have the ability or information to determine whether a particular wolf has a new, advantageous mutation when we are trying to resolve a conflict situation. We have revised our language where relevant to ensure we do not suggest that wild wolves may not have valuable gene diversity. Our approach to count the number of released wolves surviving to breeding age in both the genetic objective and associated benchmarks is focused on the transfer of captive gene diversity to the wild and supporting the success of those wolves to reach breeding age.

*Comment:* Although Miller (2017) used population and vital rate estimates from Mexican wolves, estimates of survival of Mexican wolves were made using the Heisey and Fuller (1985) method, and this method has assumptions and sampling requirements that can be difficult to verify. Given the large number of wolves that have been radio-collared over the course of the recovery program, estimates of survival could be explored using more robust statistical models, such as Cox-proportional hazard models or known-fate models, or integrated population models. Such modeling approaches should be considered in subsequent analyses.

*Our response:* We will consider alternative analytical approaches in the future for estimating survival; however, the methods utilized are within scientific standards, particularly for a population with limited emigration or immigration (Miller 2017, appendix D, pp. 67–72).

*Comment:* Beyond decreasing the probability of wolf dispersal, were other potential implications of a border wall and the associated increase in human disturbance (e.g., related to law enforcement) considered?

*Our response:* We did not consider the implications of the border wall during the development of the regulatory revisions in this rule because we do not think the border wall or associated human disturbance will affect the ability of the MWEPA to support a robust population of Mexican wolves. We agree that the border wall could affect wolf territory configuration and dispersal in localized areas near the border occasionally, but not to an extent that threatens the persistence of the population or its ability to achieve the population objective. Habitat along the border is typically unsuitable, or has low suitability, and we do not expect wolves to occupy this area consistently.

*Comment:* There does not appear to be a numerical trigger to distinguish when different allowable forms of take are permitted. The proposed rule would allow the population to be

reduced to a low number as long as no released wolves are part of the allowable take. Recovery goals are both genetic and numerical; with no numerical threshold for when proposed allowable take is permitted or not, progress toward recovery could be hindered.

*Our response:* This rule does not include a numerical trigger that dictates the utilization of allowable forms of take in relation to population size, as our focus in this rule is to comply with the March 31, 2018, order to ensure that the expanded take flexibility authorized by the 2015 10(j) rule is protective of genetic diversity. We expect to adjust the amount of take allowed by the Service and conducted by the Service and our partners, through our management actions as needed, to ensure that adult wolf mortality remains below 25 percent (USFWS 2017a, pp. 20–22). We currently do not consider the level of take expected to occur through the three forms of take that are restricted in this rule to affect population demography (USFWS 2022a, p. 117).

*Comment:* Much of the rationale in the proposed rule’s *Regulatory Flexibility Act* discussion is based on Ramler et al. (2014). This study was a non-random survey of 18 ranches and a correlation to calf weights. The subsequent assumptions in the proposed rule about the number of ranches affected are simple, as noted. The rule also states that effects on livestock production are not significant, and do not need to be addressed when not significant.

*Our response:* Ramler et. al (2014) found no evidence that wolf packs with home ranges that overlap ranches have any detrimental effects on calf weights. Primary factors that contributed to weight loss were determined to be associated with climate and individual ranch husbandry practices. However, the study did find that for ranches that experienced a confirmed cattle depredation by wolves, calves on average experienced a weight loss of approximately 22 pounds, or 3.5 percent of body weight. Ramler et. al (2014) was one of several studies used to estimate the indirect effects of wolf presence on weight loss due to associated stresses.

*Comment:* There is mixed evidence in the literature as to how compensation rates should be determined to be most effective at mitigating wildlife-livestock conflicts. Some argue that direct compensation programs may create a moral hazard problem (see e.g., Nyhus et al. 2005), which would imply that 100 percent (or higher) compensation reduces incentives for producers to undertake other risk-reducing management activities; thus, full compensation may lead to more depredations. In contrast, other literature suggests that compensations ratios need to be greater than 1 (i.e., more than 100 percent compensation for confirmed depredations) to fully compensate producers for the economic impacts of wolves, including unconfirmed depredations and the indirect effect of depredations (e.g., Ramler et al. 2014; Steele et al. 2013; Laporte et al. 2010; Sommers et al. 2010; Oakleaf et al. 2003).

*Our response:* We have followed, and will continue to follow, the available literature on this topic, which we agree suggests that different approaches may be relevant in determining adequate and appropriate depredation compensation and does not reach consensus. Livestock producers in the MWEPA currently have compensation programs available in Arizona and New Mexico, including compensation for confirmed depredations and access to collaborative nonlethal conflict avoidance tools and techniques.

*Comment:* To estimate the potential value of depredated livestock, the USFWS uses a 10-year weighted average of market values, where weights are determined by the proportion of depredated animals that are calves versus cows and prices per hundredweight (cwt) were based on 500-pound (lb) calves and 1,000-lb cows (USFWS 2021, p. 124). These assumptions result in an expected average value of \$1,094.72 per depredated cow/calf based on 2020 dollars. This approach is not inherently flawed—it can provide a reasonable average estimate over long-time horizons—but it oversimplifies the cattle market and the potential economic impacts of a

depredation of a specific animal at a specific time and place.

*Our response:* Our economic analysis presented data on cattle prices since 1996. Over that period, the price for cattle in 2020 dollars (per hundred pounds, or cwt) ranged from a low of \$94.92 in 1998, to a high of \$169.83 in 2014. The average price during this period was \$117.50/cwt compared to the average price over the last 10 years (2010–2019), which we used in our analysis, of \$134.45/cwt.

There are many independent factors affecting cattle prices on a yearly basis that lie beyond the control of ranchers. These include supply-side factors such as the quality and quantity of cattle from other areas and demand-side factors related to consumer choices. Independently, ranchers try to raise their optimal herd size based on local factors such as the cost of forage, labor, medical expenses, loan rates, and expected sales price. It is beyond the scope of our study to try and develop a detailed, predictive macroeconomic model of the Arizona/New Mexico cattle industry. Recognizing the numerous factors that can influence prices and quantities, we decided to limit our selection of market prices to only the last 10 years of data because including older data would pick up historical influences on market prices and quantities that more likely than not are not as influential or relevant in today's market. We agree that relying on the last 10 years of data to predict future cattle prices represents a simplified approach, but as noted by our peer reviewer, the approach is not flawed and is reasonable given the limitations.

*Comment:* The USFWS references the documented indirect effects of predator pressure on livestock weight gain, and explicitly attempts to account for it in their calculation of potential economic impacts. Other indirect effects, however, do not appear to be considered or accounted for. It would, admittedly, be difficult to accurately account for the full range of indirect effects.

*Our response:* Our economic analysis recognizes that in addition to the direct effects that the presence of wolves can have on cattle stocks (i.e., depredations), there are a number of potential indirect effects on the herds as well. One of these indirect effects, which we specifically attempt to account for in our economic analysis, is the effect of stress on cattle herds foraging within the vicinity of wolves. As our reviewer points out, indirect effects may include weight loss; reduction in conception rates; reduced utilization of available forage; increased risks of injury, illnesses, and diseases; and general effects on manageability. We have attempted to review the existing literature on these factors, and where reasonable data exists, we have attempted to use this information to quantitatively estimate the indirect effects on cattle herds due to the presence of wolves. Specifically, we considered the impact of weight losses on affected herds and how that may impact the profitability of ranching operations. As our peer reviewer notes, it is difficult to model the other specific effects, many of which would also manifest themselves in the form of weight loss, due to a scarcity of applicable studies that attempt to better understand all of these interactive effects that may be caused by the presence of wolves. We believe that by accounting for the indirect effects of potential weight losses, we have realistically captured the most significant financial impact of indirect effects on affected ranches.

*Comment:* The proposed rule explicitly acknowledges potential management responses, noting that estimated costs are likely an overestimate since proactive and reactive management tools are available to reduce the indirect effects associated with weight loss; however, the costs of said management tools do not appear to be explicitly accounted for within estimates of the economic impact on small enterprises (although some may be offset by federally funded or subsidized programs). Additionally, some existing literature (see e.g., Rashford et al. 2010; Lehmkuhler et al. 2007) has identified a range of potential costs associated with managing

livestock in the presence of wolves, including fence maintenance and repair, veterinary costs, reporting/verification costs, and other management adjustments.

*Our response:* Our economic analysis recognizes the fact that ranch operations within the vicinity of wolves may experience indirect economic effects associated with depredations. We recognize there are several potential categories of indirect economic effects, including stress-related effects of wolf presence on the herd, additional labor time for ranch owners to pursue depredation claims, and the investment in additional range labor time and materials in order to prevent depredations (USFWS 2014, chapter 4, pp. 29–48). The FSEIS attempted to reasonably estimate the financial cost of several of these indirect effects on affected ranches based on the studies available that provided credible research and results that could be incorporated into the analysis. We specifically were able to factor in an estimate for owner-operator labor time associated with processing depredation claims, as well as estimating the financial impact of expected weight losses on a stressed herd.

We were unable to find research that would enable us to also attempt to credibly measure the financial impact associated with undertaking additional measures to prevent depredations. While there are some studies that do recognize these impacts (e.g., Rashford et al. 2010; Lehmkuhler et al. 2007) in association with other indirect impacts (e.g., weight loss) in association with the presence of gray wolves, we were unable to extrapolate any findings that could be credibly applied to our analysis. We note that by explicitly accounting for the financial impact of weight loss of stressed herds that we are, in fact, accounting for some of the interactive costs associated with preventative measures, as such measures would not only serve as a detriment to depredations but also serve to reduce stresses on the herd and any associated weight losses. Relatedly, our Mexican wolf recovery program provides both management and financial

assistance to ranchers to minimize potential wolf-cattle conflicts. Our latest Mexican wolf recovery program progress report (number 22, January–December 2019) discusses how the Service engaged in such practices during this period and intends to develop a future database to aid in monitoring and evaluating the effectiveness of such activities (USFWS 2019, pp. 37–39).

*Comment:* Given there is only one population of Mexican wolves under the Service’s control, coupled with the uncertainties associated with alternative population sources, it is unclear how the MWEPA cannot be considered essential.

*Our response:* Neither section 10(j) of the ESA nor our implementing regulations specify that management control of nonexperimental populations is a factor in determining whether an experimental population is essential.

*Comment:* The MWEPA holds most of the remaining wild Mexican wolves (more than 90 percent), including several wild-born generations. It is highly likely that new genetic mutations have emerged in the wild, providing an evolutionary avenue for locally adapted Mexican wolves. Those alleles will not be in the captive population or Mexico’s population, thus making the MWEPA essential.

*Our response:* We agree that there is potential for new genetic mutations to have emerged, or to emerge in the future, in the wild that may benefit the adaptive potential of Mexican wolves in the MWEPA. However, this fact alone does not equate to essentiality as defined by statutory language or our regulations.

#### *Comments from Federal Agencies*

*Comment:* The Service should clarify its process to consider whether future range expansion beyond the MWEPA via natural dispersal is appropriate for the Mexican wolf due to the potential effects of climate change, and whether the increase in genetic diversity from the

genetic objective is sufficient to provide adaptive capacity against climate change. The Service should consider the updated National Fish, Wildlife and Plants Climate Adaptation Strategy and consider implementing an adaptive approach where clear trends in wolf movements north of I-40 result in consideration of expanded experimental population boundaries.

*Our response:* The Service's recovery strategy for the Mexican wolf in the revised recovery plan includes discussion of the geographic and genetic representation needed for long-term conservation and recovery of the Mexican wolf. The revised recovery plan builds two evaluation periods into the recovery process to ensure that the plan's strategy continues to be appropriate and effective (USFWS 2017a, p. 26); therefore, although we do not currently consider climate change a threat to the Mexican wolf, we will continue to revisit this issue as we evaluate our recovery strategy in the future. We also refer the commenter to our discussion of climate change related to our strategy for Mexican wolf recovery in our response to public comments on the revised recovery plan (see USFWS 2017c, pp. 12–13).

#### *Comments from States*

Comments we received from the States regarding our October 29, 2021, proposal to revise the regulations for the nonessential experimental population of the Mexican wolf in the MWEPA are addressed below. We note that some comments from the States expressed support for various features of the rule, such as the Service's intention to align the 10(j) designation with the revised recovery plan, the Service's current focus on pursuing recovery within the historical range of the Mexican wolf, and the Service's intention to capture and return to the MWEPA or captivity any Mexican wolf that disperses outside of the MWEPA. We do not provide responses to statements that are consistent with our approach. In other instances, we have incorporated

information supplied in these comments directly into the rule and similarly do not restate those issues here.

*Comment:* One State agency requested that we add language to the regulatory text in the rule stating that we have developed a 10(a)(1)(A) permit to allow for specific management activities within and outside of the MWEPA and clarifying that we will capture and return to the MWEPA or place in captivity Mexican wolves that travel outside of the MWEPA.

*Our response:* We state our intention to manage wolves that disperse beyond the MWEPA through the 10(a)(1)(A) permit in the preamble of the rule (see *Management Restrictions, Protective Measures, and Other Special Management*, above). However, only management activities that take place within the experimental population boundaries are included in the regulatory text of the rule.

*Comment:* Maintenance of the nonessential experimental population designation is critical to the Service's ability to implement responsive management actions such as cross fostering, translocations, and removals. Maintaining the existing designation is also important for maintaining the trust of the public and other agencies as a precedent for other reintroduction efforts under the ESA's section 10(j).

*Our response:* The Service acknowledges the importance of maintaining the trust of our partners. An essentiality determination under section 10(j) of the ESA is based on whether the best available information supports that the population is essential to the continued existence of the species. Based on the best available information, we have determined the MWEPA to be nonessential. We note that the primary difference between an essential and nonessential experimental population is the requirement to conduct interagency consultation under section 7(a)(2) of the ESA for populations determined to be essential and the potential to designate

critical habitat under section 4(b)(2) of the ESA. Regardless of the designation as an essential or nonessential experimental population, members of the experimental population will be treated as a threatened species which allows for developing regulations to allow for responsive and flexible management.

*Comment:* The final rule should stress that the new population objective is not intended to portray an unlimited number of wolves growing indefinitely, but rather recognizes natural variation around a target population size.

*Our response:* We discuss our expectations for the future growth of the population in the FSEIS (USFWS 2022a, pp. 24, 28, table 2.1). We have ensured that the preamble of this rule does not suggest that we expect an unlimited number of wolves growing indefinitely in the MWEPA under the revised population objective; we point to our statement in the proposed rule that, under the proposed population objective, we would continue to manage Mexican wolves in the MWEPA to maintain a population average greater than or equal to 320 wolves until delisting occurs (86 FR 59953, October 29, 2021, p. 59959), which remains consistent with the final rule.

*Comment:* The final rule should include timeframes or guidelines for when the States can request management of Mexican wolves if adverse impacts to ungulates are occurring.

*Our response:* The final rule provides this information at § 17.84(k)(7)(vi)(E).

*Comment:* Recent efforts to cross-foster genetically valuable Mexican wolf pups from captivity to the wild are demonstrating that this approach can be successfully used to achieve the proposed genetic objective. It is resulting in improvements in the population's gene diversity, mean kinship, and founder genome equivalents. The Service is on track to achieve the benchmark in the recovery plan for 9 released wolves to survive to breeding age at the 5-year review.

*Our response:* The Service and our partners have committed significant resources since 2014 to test cross-fostering as a release strategy to improve the genetic health of the MWEPA. We agree that this technique appears to be proving successful and has become a valuable tool to address genetic threats in the MWEPA. As of April 1, 2022, 13 released wolves surviving to breeding age have been counted toward the genetic objective and genetic recovery criterion (USFWS files).

*Comment:* While the proposed genetic and population objectives are appropriate and necessary for the recovery of the Mexican wolf, they may result in additional hardships for livestock producers. Therefore, a companion provision should be included in the rule to implement an aggressive program to improve the coexistence component of the recovery program.

*Our response:* The Service acknowledges that the increased number of wolves in the MWEPA could result in impacts to livestock producers and that permit restrictions will decrease the ability of some livestock operators to assist in conflict resolution in certain situations. We will continue to work with our partners and livestock operators to expand and improve our coexistence efforts as an integral part of the recovery program, but we have not added any mandatory coexistence measures to the regulatory text of this rule.

#### *Comments from the Public*

*Comment:* Many commenters stated that a single population of an average of 320 wolves in the MWEPA is insufficient for recovery. Many of these commenters stated that a metapopulation of three populations with 750 to 1,000 wolves is necessary for recovery because multiple interbreeding populations are necessary for resiliency and increasing genetic diversity.

Other commenters discussed the concept of ecological effectiveness, recommending a population objective of 500 breeding animals.

*Our response:* These commenters did not provide new information that the Service has not already considered and responded to in its development of the recovery criteria in the revised recovery plan for the Mexican wolf (USFWS 2017c, pp. 19–20) or the population objective for the MWEPA (85 FR 20967, April 15, 2020; USFWS 2021, pp. 202–206). Therefore, we did not make any changes to this rule in response to these comments.

*Comment:* Commenters questioned or expressed concern with the recovery strategy to have one population in the MWEPA and one in Mexico, stating that dispersal between the two areas would be infrequent, associated with a high risk of mortality, and dependent on successful navigation of low habitat quality and an impermeable border wall.

*Our response:* We provide our rationale for the recovery strategy for the Mexican wolf in the revised recovery plan and address issues such as dispersal between Mexican wolf populations in the United States and Mexico. The 2015 10(j) rule revisions included the extension of the experimental population boundaries to the international border with Mexico in recognition that management of dispersing wolves between the two populations would be necessary. We addressed comments about this topic in the DSEIS (USFWS 2021, pp. 199–202) and previously in our response to public comments on the revised recovery plan (USFWS 2017c, p. 18).

*Comment:* One commenter expressed concern that under the proposed population objective, the requirement of an 8-year average of 320 with the last 3 years stable or increasing could allow for the Service to translocate or remove/take around 150 wolves at some point after the population objective has been reached and exceeded.

*Our response:* The Service is establishing a population objective in this rule that will result in a robust population that contributes to recovery; we intend to manage the population in accordance with meeting and maintaining this objective.

*Comment:* A commenter mentioned the proposed rule does not include a human-caused mortality criterion or management actions that will substantively address this issue.

*Our response:* Human-caused mortality is a broad term that encompasses several forms of mortality for Mexican wolves, including vehicular collision, shooting, trapping, and management removal. This rule maintains multiple provisions from the existing regulations in the 2015 10(j) rule that address the threat of human-caused mortality, including prohibitions to restrict the take of Mexican wolves (§ 17.84(k)(5)) and limitations on activities that may disturb Mexican wolves and affect their persistence (§ 17.84(k)(8)). In addition, this rule provides new restrictions on three forms of take that could result in human-caused mortality, as well as providing a revised population objective to ensure the population continues to grow as necessary to alleviate demographic threats. In addition, the Service is expanding our efforts to address human-caused mortality in our revisions to the revised recovery plan (USFWS 2022b, pp. 30–33).

*Comment:* Several commenters noted the delay in receiving compensation for depredations and stated that an increase in the wolf population will make the situation more severe for livestock operators.

*Our response:* The Service is aware of the delays in receiving compensation in previous years. The Service's Wolf Livestock Loss Demonstration Project Grant Program for eligible States and Tribes has served as the primary funding source for compensation and requires a 50:50 non-Federal match; most delays in receiving compensation have occurred as a result of

grant funding and match funding not being available at the same time. The Service has made improvements to the Wolf Livestock Loss Demonstration Project Grant Program and worked with its partners to secure match funding, helping to alleviate this issue.

*Comment:* One commenter noted that the Service is inconsistent because it says that no unique genes would be lost if released wolves did not survive in the MWEPA, but then it uses genetic importance as a reason not to remove wolves during conflict situations.

*Our response:* Wolves released to the wild from captivity are considered surplus wolves whose genes are represented by related wolves still held in captivity. Therefore, a released wolf could be replaced with a related surplus wolf from captivity if necessary. However, because we are trying to improve gene diversity in the MWEPA, it is important for released wolves to survive and breed so that genes from captivity that are currently underrepresented in the wild become integrated into a more genetically diverse MWEPA population.

*Comment:* Multiple commenters questioned whether the Service has objectives related to ensuring specific representation of the three founding lineages of the captive population, such as to achieve 50 percent, 25 percent, and 25 percent, respectively, of the Certified (McBride), Ghost Ranch, and Aragon lineages.

*Our response:* We currently focus on increasing founder representation rather than lineage representation in the wild; however, we do not have specific objectives related to this metric at the current time.

*Comment:* Many commenters discussed the basis of the proposed genetic objective to ensure that 90 percent of the genes in the captive population are expressed in the MWEPA population. Several commenters noted that wildlife managers typically set genetic retention goals relative to the current source population. These commenters questioned or critiqued the Service's

approach to aim to retain 90 percent of gene diversity at 100 years in the future because the projected diversity in the captive population 100 years in the future is a much lower value. These commenters expressed concern over the already-depleted genetic status of the captive population and the concept of tying the genetic future of the wild populations to the ongoing deterioration of gene diversity in captivity. Another commenter stated that the SSP uses 90 percent gene retention as a standard in conserving some captive populations, but this does not make it a “community of practice standard” as claimed in the revised recovery plan nor is it appropriate for the Service to use it as a foundation for recovery criteria.

*Our response:* We expect to achieve the genetic objective in this rule within 8 years. We used a metric (i.e., the number of animals that survive to breeding age) as the basis of the revised recovery plan genetic criterion that coupled model performance with performance of the wild populations (Miller 2017, entire) to ensure that a large degree of the gene diversity available in captivity is transferred to the wild population to reduce the likelihood of genetic threats such as inbreeding. We provide our rationale for our objectives and strategy in the revised recovery plan (USFWS 2017a, pp. 13–15, 22–24; USFWS 2017c, pp. 28–29), which formed the basis for the genetic objective in this rule.

*Comment:* Some of the commenters recommended releasing adult pairs with pups instead of, or in addition to, cross-fostering captive puppies into wild dens because adult wolves could more quickly affect the genetics of the MWEPA and because adult releases have had a higher success rate. Several of these commenters stated that the concept of “effective migrants” is a better scientific principle than released wolves surviving to breeding age because it ensures that reproduction of released wolves takes place and that genes from captive wolves are integrated into the population. These commenters stated that the Service’s proposal is insufficient

scientifically for genetic recovery and should be replaced by actual evidence of increased heterozygosity and increased allelic diversity in the population, validated by monitoring to ensure retention. Commenters stated that the rule should commit to all release strategies to achieve genetic objectives.

*Our response:* This rule maintains the zone definitions of the 2015 10(j) rule, which allow for the release and translocation of adult and sub-adult wolves or puppies in specific geographic locations within the MWEPA. While we have stated our current preference for cross-fostering puppies compared to releasing adult wolves, this rule does not alter the availability of the release strategies supported by the commenters. We provide our rationale for using “released wolves surviving to breeding age” as the metric for the establishment of a genetic objective from the MWEPA in our FSEIS (USFWS 2022a, pp. 11, 24–26) and have previously addressed this in our response to comments on the revised recovery plan (USFWS 2017c, p. 79).

*Comment:* Commenters recommended that released wolves should be tracked, and that genomic survey and analysis should be used to determine how many released captive wolves have contributed genetically to the wild population and what their actual contribution has been. Commenters also restated the recommendation for a replacement release objective, in which the Service would release captive wolves to make up for wolves lost due to removal or illegal killing.

*Our response:* We track released wolves using global positioning system (GPS) or radio-collars and provide data on survival and reproduction of released wolves in quarterly and/or annual reports. We establish our expectations for releases and translocations in our annual Initial Release and Translocation Plan and during annual management meetings with the SSP. Both of

these processes are reflective of the needs of the population, including awareness of demographic rates, progress toward management objectives, or other special management considerations.

*Comment:* One commenter recommended that at a minimum, captive releases should result in increasing the level of gene diversity, founder genome equivalents, and mean kinship to a level at least 50 percent between that expected in the captive population and that expected in the wild population, given no releases, because if achieved, this could relieve some of the deleterious impacts of inbreeding depression in the wild population.

*Our response:* We will continue to monitor the gene diversity, founder genome equivalents, and mean kinship of the MWEPA, as stated in this rule in response to other comments, to validate that genetic threats are being alleviated over time. There is no definitive standard in the literature upon which to assess the extent to which deleterious impacts of inbreeding depression would be reduced according to the commenter's recommendation, although we recognize it as a protective recommendation that strives to ensure adequate gene diversity in the MWEPA for the long-term health of the population, as consistent with the purpose of our genetic objective.

*Comment:* One commenter stated that it is unlikely that the pedigree of cross-foster pups released to the wild would closely match the pedigree of the releases simulated by the population viability model used in the revised recovery plan (Miller 2017); therefore, the model results suggesting that 22 released wolves surviving to breeding age is sufficient may not be robust. Other commenters questioned whether cross-foster releases have less genetic impact than adult releases because cross-fostered pups come from the same litter.

*Our response:* The Miller 2017 population viability model ran 1,000 iterations to explore the range of outcomes possible for each scenario. We agree that any single model run may not

accurately represent the same specific wolves that we have released in the MWEPA, but the model results are robust in estimating that 22 released wolves will ensure that approximately 90 percent of the gene diversity available in captivity is represented in the wild because the results stem from averaging the results of many iterations (see Miller 2017, p. 16). We recognize that cross-foster pups come from the same litter and are therefore related, but we do not expect all pups placed in a wild den to survive; that is, we expect pup survival of approximately 50 percent during their first year of life. Therefore, the 22 released wolves surviving to breeding age will come from different litters placed during different cross-fostering events. Regardless, the wolves prioritized for release to the wild are those that have gene diversity that is not represented, or that is underrepresented, in the MWEPA and that will, therefore, be beneficial to release.

*Comment:* Some commenters questioned whether the SSP can continue to support the number of cross-foster events the Service has conducted in recent years or raised concern that cross-fostering could lead to higher relatedness in the MWEPA if cross-foster puppies continue to come from the same captive pairings each year.

*Our response:* The Service works with SSP facilities on an annual basis to plan breeding events to support cross-fostering in the MWEPA. The number of breeding events that can be supported across SSP facilities and the relative genetic importance of specific pairings (breeding events) to produce puppies that would provide unique gene diversity to the MWEPA are integral components of our planning. The SSP can continue to provide puppies for cross-fostering based on the number of breeding age animals in the population and the number of facilities available to support breeding events.

*Comment:* One commenter questioned how it is possible that captive wolves being released could have gene diversity that is not represented in the MWEPA population, given that the Service has been releasing wolves since 1998.

*Our response:* No new genes have been added to the captive population since the merging of the three founding lineages occurred in the mid-1990s; however, the captive population still contains genes not represented in the MWEPA because wolves with those genes have either not yet been released, have not been integrated into the population due to mortality, or are significantly underrepresented in the MWEPA.

*Comment:* One commenter stated that the frozen semen bank developed by the SSP contains genetic variation not currently expressed in the wild population. The commenter recognized that it may take several more years to develop artificial insemination procedures from frozen semen but stated that the Service should pursue this strategy in addition to ensuring 22 released wolves survive to breeding age.

*Our response:* We agree that the frozen semen bank may offer an opportunity to infuse additional gene diversity to the MWEPA. We will continue to explore and support opportunities to test and utilize technological procedures to slow the loss of gene diversity in the captive population and ensure the representation of available diversity in the wild as these procedures become available.

*Comment:* Genomic survey and analysis in wolves is readily available and inexpensive compared to the overall cost estimated for Mexican wolf recovery. In 2022, the best state-of-the-art scientific information, such as actual genetic variation using genomic survey and analysis, should be used for this important aspect of the recovery plan.

*Our response:* We agree that genomic survey and analysis techniques are available, may be affordable, and can be further integrated into our ongoing monitoring of the genetic status of the MWEPA population.

*Comment:* One or more commenters stated that the inbreeding depression documented by Fredrickson et al. (2007) likely still exists in the population, because it would be unlikely for it to disappear without an extreme breeding scheme. A commenter noted that natural selection would be more likely to result in the purging of inbreeding if supplemental feeding were stopped, as supplemental feeding may be improving the survival of inbred litters. This commenter recommended that any future evaluation of the genetic fitness of Mexican wolves contributing to a determination on their recovery must be made in the absence of supplemental feeding for at least five generations (20 years). Another commenter stated that viability estimates for the population from the population viability model (Miller 2017) would likely be different if the effect of inbreeding had been calculated differently for packs that are supplementally fed versus those that are not. This commenter suggested looking at larger, longer-term datasets from other gray wolf populations to inform input parameters related to inbreeding. A commenter stated that supplemental feeding is likely accelerating inbreeding accumulation and the loss of genetic variation in the population.

*Our response:* As stated in our responses to other comments, we expect to conduct additional analyses related to inbreeding during the recovery process for the Mexican wolf. When we collect that future data set, we can determine the appropriate methods for incorporating data from packs/litters that have been supplementally fed. We expect to decrease the use of supplemental feeding as the population reaches recovery and some management activities are

curtailed; this may include assessing genetic health within the context of a different (lesser) supplemental feeding regime such as suggested by the commenter.

*Comment:* One commenter questioned what will happen if 22 released wolves have not survived to breeding age by 2030, which is the end of the benchmarks proposed by the Service.

*Our response:* If 22 released wolves have not survived to breeding age by 2030, we will extend the temporary restriction until the genetic objective is reached, using the same annual process that accompanies the benchmarks to evaluate whether permits for take on Federal and non-Federal land will be issued in the year ahead.

*Comment:* Several commenters noted that very few take permits have been issued to the public. Some commenters made this statement as support that take restrictions are not needed, while others stated that the Service and its partner agencies have been the ones taking Mexican wolves and the proposed revisions to the regulations do not limit this form of killing and removal. One commenter stated that the Service acknowledges in the 2017 biological report (USFWS 2017a) that management removals function as a type of mortality to the population, and therefore the Service needs to address its own level of removal in the 10(j) rule.

*Our response:* The Service considers it important to retain the ability to remove wolves in specific situations in which nonlethal management actions are ineffective at resolving conflicts. The agency's level of removal is consistent with the recovery needs of the Mexican wolf, as evidenced by the growth of the population for the last 6 years during the implementation of the 2015 10(j) rule.

*Comment:* One commenter stated that the proposed revised take provisions do not result in significant differences in take compared to the 2015 10(j) rule. One commenter stated that

basing the projection on the number of permits that have been issued does not limit what could be issued in the future.

*Our response:* The Service did not intend for the take provisions in the 2015 10(j) rule to lead to an excessive level of take that would hinder the recovery of the Mexican wolf, nor have we used any take provision excessively since implementation of the 2015 10(j) rule began. However, we recognize that as written in the 2015 10(j) rule, several of the take restrictions provide expanded take flexibility without ensuring commensurate progress toward recovery. To analyze the possible effects of the take provisions on Federal and non-Federal land, we extrapolated the number of permits that may be issued in the future based on our current level of permit issuance (USFWS 2022, pp. 28–29, table 2.1). We agree that based on this approach, there are not large differences in take compared to the 2015 10(j) rule, and that it would be possible to issue many more permits than our projections estimate. The potential for issuance of a large number of permits emphasizes that without limiting or restricting the take provisions, this rule may not support the long-term conservation and recovery of the Mexican wolf. By temporarily restricting three take provisions during a critical period of recovery, as we do in this rule, we ensure that genetic threats to the Mexican wolf are rapidly lessened and alleviated.

*Comment:* One commenter questioned what the incentive is for Service staff to achieve the benchmarks, since not meeting the benchmarks will continue to result in restricted take.

*Our response:* The Service considers the permits to be a form of management flexibility to address conflict situations across the MWEPA, in particular as the wolf population grows and the number of conflicts increases. Therefore, the Service would utilize the permits when doing so will be appropriate in the context of the long-term conservation and recovery of the Mexican

wolf; in other words, the incentive for Service staff to achieve the benchmarks is to reach recovery targets and to increase our management flexibility to address conflicts.

*Comment:* A number of commenters stated that the Service and State agencies should ban coyote hunting in the MWEPA due to the loophole provided by the McKittrick policy for people who shoot wolves claiming they thought they were coyotes.

*Our response:* Regulating coyote hunting is beyond the scope of these revisions that the Service is taking to comply with the March 31, 2018, order.

*Comment:* Several commenters recommended that the Service should not remove wolves for natural predation on wild ungulates. These commenters recommended the Service remove the take provision for unacceptable impact to a wild ungulate herd. In contrast, other commenters questioned whether the Service has any mechanisms to address drastic declines in elk herds during the (estimated) 6 years in which State game and fish agencies would not be able to request take in response to an unacceptable impact to a wild ungulate herd. One of these commenters stated that the level of wolf removal that may be needed after the period of restriction is likely to be much more severe than without the restriction. Several other commenters questioned why we would need to limit the State game and fish agencies from requesting to utilize the unacceptable impact take provision if translocation of wolves is an option, or why the restriction is necessary at all given the strict process by which the Service would approve any requests made by the States. This commenter clarified that the Service's statement that we would not know how much take would occur is false, because the Service would have to approve the take.

*Our response:* Mexican wolf predation on wild ungulates occurs as a normal part of Mexican wolf ecology. We recognize that in infrequent situations, predation could result in a

drastic decline in a localized wild ungulate herd, and that this may be a management concern for the State game and fish agencies and hunting and guiding businesses in the MWEPA. The take provision for take in response to an unacceptable impact to a wild ungulate herd addresses these infrequent situations, rather than the ongoing, natural background level of predation that occurs from the presence of Mexican wolves across the landscape. Therefore, we consider this take provision to be a reasonable component of our management in the MWEPA, and consistent with the recovery of the Mexican wolf. Our temporary restriction of this take provision ensures that the gene diversity of the MWEPA population improves sufficiently to decrease gene threats prior to allowing for the removal of wolves in response to an unacceptable impact to a wild ungulate herd. As we explain in the FSEIS (USFWS 2022, pp. 111–116), we do not expect wolf density to reach a level where unacceptable impacts occur during the period of restriction. However, the restriction of take provisions motivates the Service and our partners to accomplish the genetic objective as quickly as possible, which will benefit the recovery of the Mexican wolf. Therefore, if drastic declines were to begin to be observed, efforts to release more wolves could shorten the period of restriction. While we understand the commenters' statement that the Service would approve future take requests under this take provision and would therefore know how many wolves would be taken, we meant that because we have not used this provision and do not know the circumstances of future requests, it is difficult at this time to estimate the level of take of released wolves that could occur through this provision. After the genetic objective is achieved and the period of restriction ends, the take of released wolves will not hinder the genetic health of the MWEPA because released wolves will no longer represent unique gene diversity, as described elsewhere in this rule.

*Comment:* Commenters expressed concern about the Service's proposal to restrict take provisions because take provisions promote management flexibility and coexistence between wolves and local residents. These commenters pointed out that the MWEPA is a working landscape where wolves should be managed in a manner that is compatible with other uses, such as livestock operations. These commenters stated that without take authority, livestock operators will not be able to protect themselves from direct economic impacts. Several commenters suggested that at specific population sizes (e.g., more than 320 wolves) any ongoing restriction of take provisions should be removed to ensure that wolves do not cause additional impact and harm.

*Our response:* The Service strives to balance the recovery needs of the Mexican wolf with the needs and concerns of local communities, including livestock operators. The take restrictions in this rule were developed to ensure that progress toward recovery dictates the availability of management flexibility such as the issuance of permits to livestock operators, while also ensuring that the Service and our partners maintain the ability to address conflict situations. During the period of restriction, the Service and our partners will work with livestock operators to utilize nonlethal management response to conflict situations, or, in the event that nonlethal measures are ineffective, may remove a wolf or wolves to resolve the situation. These management approaches will continue, regardless of population size, until the genetic objective is reached. In addition, during the period of restriction, domestic animal owners on non-Federal land will maintain the ability to take a wolf that is in the act of biting, killing, or wounding a domestic animal at the time of take.

*Comment:* Some commenters stated that ranchers in the MWEPA no longer attempt to obtain a permit for take of Mexican wolves on Federal or non-Federal land because the Service

requirements for issuance are so stringent and delayed that, even if granted, wolves have already inflicted damage. The commenter stated that livestock operators and local citizens believe no permits will be issued, making the take permit on non-Federal land as currently managed a meaningless management tool for depredating wolves. This commenter requested that the Service assign additional staff to facilitate and deliver permits.

*Our response:* The Service will work towards improving the timing of the issuance of permits. However, permits can only be issued in conjunction with removal actions and are by definition a response to inflicted damage by wolves that has already occurred.

*Comment:* Commenters stated that the rule must address all forms of take to ensure the rule will protect the genetic diversity of the Mexican wolf; one commenter recommended the Service initiate a process to account for the genetic value of every wolf being considered for removal. Another commenter stated that the Service's approach assumes that only wolves released after 2016 are genetically valuable, which the commenter states is not true.

*Our response:* The establishment of the genetic objective provides an overarching strategy to improve the gene diversity of the MWEPA and engages all management actions in the pursuit of achieving the objective. Per the March 31, 2018, order, we specifically focus on restricting three forms of take that were expanded in the 2015 10(j) rule. We incorporate benchmarks for two of these take provisions that connect the issuance of permits (i.e., management flexibility) to the number of released wolves surviving to breeding age; these benchmarks motivate the Service and our partners to release wolves and to utilize nonlethal methods to manage conflicts so that released wolves that could count toward the genetic objective may not be taken during the course of management activities. The genetic objective we are establishing serves as an indicator that we have transferred a large degree of the gene

diversity available in captivity to the wild population. We do not intend to suggest that wild wolves may not have valuable gene diversity. However, because we are trying to improve gene diversity in the MWEPA, it is important for released wolves to survive and breed so that genes from captivity that are currently underrepresented in the wild become integrated into a more genetically diverse MWEPA population. The Service and designated agencies currently evaluate the genetic value of every wolf being considered for removal within the context of other management considerations such as the level of conflict occurring and the range of conflict response measures available.

*Comment:* Several commenters questioned how the Service will verify whether a wolf taken with a permit in the previous year was a released wolf.

*Our response:* We intend to collar released wolves to assist in our ability to determine whether a wolf taken with a permit was a released wolf. Because cross-fostered pups are too small to be fitted with collars, we microchip pups and obtain genetic markers through blood samples to identify individuals. At 1 year of age, pups are nearly the size of adults and can be fitted with collars. In any case, because we take blood samples from released wolves prior to release, we will be able to determine the identify of a wolf taken with a permit through its microchip or subsequent blood or scat samples.

*Comment:* Several commenters recommended that the proposed restriction of take provisions be made permanent rather than temporary in order to ensure that take does not negatively affect Mexican wolf recovery. One commenter stated that by making the restrictions temporary, the rule will only serve short-term conservation needs of the Mexican wolf and, therefore, falls into the same error as the 2015 10(j) rule. This commenter recommended

implementing a monitoring protocol that would require the restrictive provisions be put into place again if the genetic health of the population declines in the future.

*Our response:* As described throughout this rule, this rule aligns the nonessential experimental population designation with the recovery strategy and criteria outlined in the revised recovery plan for the Mexican wolf, and therefore contributes to the long-term conservation and recovery of the Mexican wolf. We consider temporary restriction of the take provisions appropriate during the period in which we are focused on achieving the genetic objective because this is when the release of captive wolves will have the most positive contribution to the MWEPA in lessening the risk of genetic threats. After we have integrated a large degree of the gene diversity available from captivity into the wild, the gene diversity of captive wolves will not be as significant; in other words, it will already be represented in the wild. Therefore, restricting the take provisions after the genetic objective is met will not have the protective effect that it will have prior to achieving the genetic objective.

*Comment:* Numerous commenters referenced scientific literature related to the relationship between poaching (illegal killing) and the level of legal protection afforded to wolves (e.g., Louchouart et al. 2021). These commenters stated that the scientific literature makes clear that illegal killing of wolves increases when protections for wolves are lessened and that nonlethal methods to address conflict are effective when properly implemented. These commenters stated that Service policies to liberalize take permits will incentivize and encourage poaching, and therefore recommended that the Service permanently suspend the use of any type of take permit or restrict all forms of take significantly. Many of these commenters recognized that the Service currently uses nonlethal methods to address conflict in some situations and recommended that the Service increase its focus on nonlethal methods to reduce and address

conflicts by adding language to the rule in support of, or to mandate, nonlethal methods of management. Several commenters specified that instead of the Service expecting livestock owners to assist with management actions in the future, the Service should use its resources to expand the use and training of nonlethal methods with livestock operators. In contrast, several commenters noted that some nonlethal measures cause unexpected consequences or are impractical, citing examples that range riders push wolves onto a ranchers' neighbors and that it is impractical to expect ranchers to install fladry (a rope mounted along the top of a fence, from which are suspended strips of fabric or colored flags, that will flap in a breeze) across tens of miles of fencing.

*Our response:* The effectiveness of nonlethal deterrents is dependent on various characteristics of the area and individual livestock operations. For instance, many tools (fladry, radio-activated guard boxes, and electric fencing) are only effective in small areas. The southwestern U.S. differs from other geographic areas where much of the scientific literature has been developed in several aspects that are relevant to the efficacy and logistical feasibility of nonlethal tools, such as: (1) Calving pastures that are hundreds of square miles versus less than 2 square miles, (2) reduced stocking rates that are reflective of reduced feed and water in localized areas, and (3) year-round calving rather than seasonal calving. Many nonlethal tools that may be effective in other areas may not be as effective or logistically feasible in the MWEPA. Nevertheless, some innovative tools (diversionary feeding, range riding, hazing) have reduced depredations in the MWEPA in certain situations. The Service will continue to focus on, and expand, the use of nonlethal tools where appropriate and utilize removal as a last resort to prevent depredations. Further, this rule is more restrictive relative to take than the 2015 10(j) rule. Based on the hypothesis referenced by commenters of an inverse relationship between

illegal killing and the level of protection afforded to wolves, the prediction would be for this rule to result in reduced illegal killing relative to the previous time period. We note that this conclusion is far from a consensus in the literature.

*Comment:* Commenters suggested that the loss of newly released wolves outside of the area previously designated as the Blue Range Wolf Recovery Area (BRWRA) in the original 10(j) rule for the MWEPA (63 FR 1752; January 12, 1998) would not appreciably reduce the likelihood of the species' survival because it would have no effect on the survival of the previously established wolf population.

*Our response:* We consider all Mexican wolves in the MWEPA to function as a single population regardless of their current location compared to the previous geographic area designated as the BRWRA; therefore, our essentiality determination is based on the MWEPA as a whole, rather than solely the area beyond the boundaries of the previously designated BRWRA that became allowable for wolf occupancy under the 2015 10(j) rule.

*Comment:* Several commenters expressed support for an essential determination because they claimed that an essential designation would reduce illegal take or better support the SSP in providing genetic diversity for Mexican wolves in the wild.

*Our response:* A determination of essential would result in several changes to the experimental population, including conducting interagency consultation under section 7(a)(2) of the ESA and the potential to designate critical habitat under section 4(b)(2) of the ESA. Neither of these provisions would directly impact the level of illegal take occurring or the function or ability of the SSP to support the reintroduction of the Mexican wolf to the wild.

*Comment:* Many commenters stated that an essential designation would better support recovery due to the section 7 consultation requirements and the potential to designate critical habitat for the Mexican wolf.

*Our response:* An essentiality determination under section 10(j) of the ESA is based on whether the best available information supports that the population is essential to the continued existence of the species, not whether the consultation or critical habitat requirements of the ESA resulting from an essential determination would have a conservation benefit to the subspecies' recovery.

*Comment:* Several commenters stated that if we lose the wild population, we lose several decades representing multiple generations of adaptive evolution, and this supports an essential designation.

*Our response:* The ESA does not specify that maintenance of adaptive evolution is a factor in an essentiality determination. We agree that if we lost the MWEPA population we may lose some local adaptations in that process; however, we consider the ability to restart a population using captive wolves as a determining factor in our decision because wolves from the captive population are still able to provide gene diversity sufficient for reintroduction.

*Comment:* Commenters expressed concern that Mexican wolves should be designated as essential because the population in Mexico is not big enough or genetically diverse enough to promote the recovery of the species.

*Our response:* We recognize that further alleviation of demographic and genetic threats is necessary for the population in Mexico to achieve recovery objectives. However, Mexico has released and managed Mexican wolves in the wild for more than a decade, demonstrating a consistent effort to establish a population for recovery. Because we consider the wolves in

Mexico to function as a population, and due to Mexico's concerted and ongoing efforts to increase the abundance and distribution of the population, we consider it a valid population to consider in the context of our essentiality determination.

*Comment:* One commenter recommended that the Service should provide examples of a 10(j) population that has been designated as essential for comparison's sake and to show the agency's factual bar for an essential determination.

*Our response:* The Service has never designated a 10(j) population of any species as essential; therefore, we are unable to provide the example requested by the commenter. In fact, Congress' expectation was that "in most cases, experimental populations will not be essential" (H.R. Conference Report No. 835, *supra* at 34). The preamble to our August 27, 1984, final rule reflects this understanding, stating that an essential population will be a special case and not the general rule (49 FR 33885, August 27, 1984, p. 49 FR 33888). We consider each essentiality determination on a case-by-case basis due to the varying circumstances and life history of the species. As we explain in our determination in this rule, the existence of a robust captive population and another wild population of Mexican wolves are central factors in our determination.

*Comment:* Some commenters expressed concern that continued Mexican wolf generations in captivity may result in evolutionary maladaptation to the captive environment (e.g., see Frankham 2008).

*Our response:* We will continue to evaluate the suitability of captive wolves prior to their release to the wild. SSP facilities adhere to strict husbandry protocols to minimize the likelihood of maladaptive behaviors.

*Comment:* One commenter stated that based on the size of the MWEPA population and the number of breeding wolves in the captive population it would be untenable to replace the MWEPA population because over 90 percent of the captive breeding-age wolves would need to be released.

*Our response:* We would not expect to restart a wild population in the MWEPA that would immediately obtain the current size of the MWEPA population (close to 200 wolves). We explain our approach to restarting a population in the MWEPA in this rule (see above under *Is the experimental population essential to the continued existence of the species in the wild?*)

*Comment:* The Service received published scientific papers and gray literature (reports) during the public comment period related to the following topics: population viability analysis, Mexican wolf genetics, the impact of lethal management on illegal killing, large carnivore poaching, livestock predation, population estimation analysis, predator tolerance/control, science and policy, large carnivore management, research and independent/peer review transparency, improving the framework of the ESA, threats to biodiversity and binational conservation, the Mexican wolf's geographic range, metapopulation connectivity, the vulnerability of the Mexican wolf to climate change, and wolf conservation planning.

*Our response:* We have reviewed and incorporated this information into this final rule where applicable.

*Comment:* A number of commenters raised concern that the Service is aligning the 10(j) rule with the recovery plan. Commenters stated that the Federal court prohibits aligning the 10(j) rule with the recovery plan. Commenters are also concerned that aligning the 10(j) rule with the recovery plan does not promote recovery since recovery plans are discretionary and not mandatory. Some commenters expressed concern that tying the new rule to the recovery plan is

unnecessarily making the rule vulnerable. Specifically, commenters referenced the judge's statement that the rule must be flexible enough to remain valid through changing conditions and future revisions for recovery plans. Commenters also raised concern over the court-ordered revision of the recovery plan due in October 2022, and the 5-year status review scheduled for 2022–2023, which they stated could result in changes to the recovery plan, which they claim would render this new rule invalid or subject to further litigation. Other commenters expressed that given the significant scientific flaws in the recovery plan, the Service is violating the court's order and the ESA's best available science mandate by aligning the revised rule to the recovery plan.

*Our response:* See our discussion, above, in **Rationale for Revisions to the Experimental Population Designation in Relation to Recovery**. While implementation of recovery plans is discretionary and no partner is required to implement a recovery plan, the Act requires the Service to develop recovery plans for the conservation and survival of listed species. Such plans must include criteria which, when met, would result in a determination that the species be removed from listed status (i.e., that the species is recovered). Because we must also determine that our experimental population designations will further the conservation of the species, it is appropriate for us to align our 10(j) rule with the recovery plan developed for the conservation of the species. As noted above in *Review and Evaluation of the MWEPA Population*, multiple reviews are built into our processes in acknowledgement that conditions may change and necessitate adjustments.

*Comment:* One commenter stated that the judge told the Service that it could not depend on another population when ensuring that the MWEPA population furthers the conservation of

the Mexican wolf, yet the MWEPA population and genetic objectives are dependent on Mexico achieving its recovery goals.

*Our response:* This final rule revises several features of the MWEPA designation to ensure that the MWEPA supports the Service's recovery strategy for the Mexican wolf as laid out in the revised recovery plan (USFWS 2017b, pp. 10–17). Specifically, the population objective and genetic objective in this final rule ensure that the MWEPA population is robust and free from demographic and genetic threats. In other words, the MWEPA population must function as an independent, robust, healthy population in order to contribute to recovery, but it is not the only population necessary for recovery.

*Comment:* Some commenters raised issues with the consultation that was conducted on the 2015 10(j) rule under section 7 of the ESA. One commenter stated that there were severe deficiencies in the consultation process for the 2015 rule and the Service needs to conduct a new consultation on the new rule and associated section 10(a)(1)(A) permit; another commenter stated that the proposed revision provides no indication that the Service initiated or completed intra-agency consultation on the revised 10(j) rule.

*Our response:* As part of the Service's action to revise the experimental population designation of the Mexican wolf in the MWEPA, we have conducted section 7 consultation.

*Comment:* Some commenters expressed concern over trapping of Mexican wolves. One commenter stated that the provisions in 50 CFR 17.84(k) that relate to trapping must be modified in recognition that, except for a few specific exceptions, trapping on public lands in New Mexico is now illegal. Another commenter stated that private wolf trapping or snaring should be a violation of the 10(j) rule and the FSEIS must consider the effects of trapping on Mexican

wolves. Other commenters expressed concern about the impact of New Mexico's trapping regulation on the ability of the Service to manage wolves.

*Our response:* Our regulations at § 17.84(k)(5)(iii) and (k)(7)(iv) provide the regulatory prohibitions and exceptions to those prohibitions for taking a Mexican wolf with a trap, snare, or other type of capture device in the MWEPA, including our due care provisions at § 17.84(k)(5)(iii)(A), which state that due care includes following the regulations, proclamations, recommendations, guidelines, and/or laws within the State or Tribal trust lands where the trapping takes place.

*Comment:* Several commenters expressed confusion over whether the numbering in the regulatory text of the October 29, 2021, proposed rule would negate provisions with the same numbering from the 2015 10(j) rule.

*Our response:* We are not eliminating any of the regulations established by the 2015 10(j) rule other than those that are revised by this final rule. We have ensured that the revisions and additions to the regulatory text of § 17.84(k) in this rule do not erroneously negate any of the regulations established by the 2015 10(j) rule.

*Comment:* Many commenters mentioned geographic issues related to the MWEPA, primarily in support of geographic expansion of the MWEPA beyond the current MWEPA boundaries, especially the I-40 boundary. These commenters offered many reasons for geographic expansion, such as population resiliency and redundancy, including a metapopulation configuration for recovery; adaption to climate change; habitat availability; and issues related to depicting historical range based on mitochondrial DNA rather than previous morphological data.

*Our response:* We explained during scoping that we would not revise the geographic boundaries of the MWEPA during the revision of the 2015 10(j) rule. Our focus in this rule is to

comply with the March 31, 2018, order. We responded to public comments about geographic issues in our response to scoping comments (USFWS 2022a, pp. 201–205) and previously in our response to comments on the revised recovery plan (USFWS 2017c, pp. 8–18).

*Comment:* Several commenters stated that the revised rule must ensure the conservation of the Mexican wolf’s ecosystems; this should be done based on an analysis of the Mexican wolf’s historical range, the subspecies’ genetic status, the size of the population, and the area that will be required to support it in order to ensure future viability and recovery. After identifying the Mexican wolf’s ecosystems, commenters recommended the Service must then consider important features to conserve in those ecosystems.

*Our response:* This rule clearly explains the contribution of the experimental population to the recovery of the Mexican wolf. For a broader discussion of Mexican wolf recovery, including historical range, genetics, population viability, habitat suitability, and other aspects of ecosystem conservation as mentioned by the commenter, we refer the commenter to the revised recovery plan and to the related biological report and its appendices (USFWS 2017a, entire; USFWS 2017b, entire).

*Comment:* Several commenters expressed disagreement with the findings of the Service’s takings analysis, stating that destruction of livestock by Mexican wolves is a taking by the Federal Government.

*Our response:* Damage to private property caused by protected wildlife does not constitute a “taking” of that property by a Federal agency that protects or reintroduces that wildlife.

## **Summary of Changes from the October 29, 2021, Proposed Revision to the Regulations for the Nonessential Experimental Population of the Mexican Wolf**

In this rule, we:

- Revise the wording of the population objective in response to peer review of the October 29, 2021, proposed rule (86 FR 59953) to clarify our methodology to verify a stable or increasing population over an 8-year period. This clarification is set forth under **Regulation Promulgation**, below.

- Revise and restructure our essentiality determination from the October 29, 2021, proposed rule (86 FR 59953) to clarify the information and rationale used in our determination. The essentiality determination in this rule is provided above under *Is the experimental population essential to the continued existence of the species in the wild?*

### **Required Determinations**

#### *Regulatory Planning and Review—Executive Order 12866 and 13563*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review all significant rules. OIRA has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the Nation’s regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The Executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

*Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996; 5 U.S.C. 801 et seq.), whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare, and make available for public comment, a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. We certify that this rule will not have a significant economic effect on a substantial number of small entities. The following discussion explains our rationale.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include such businesses as manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and forestry and logging operations with fewer than 500 employees and annual business less than \$7 million. To determine whether small entities may be affected, we considered the types of activities that

might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

Importantly, the impacts of a rule must be both significant and substantial to prevent certification of the rule under the Regulatory Flexibility Act and to require the preparation of a regulatory flexibility analysis. If a substantial number of small entities are affected by the rule, but the per-entity economic impact is not significant, the USFWS may certify. Likewise, if the per-entity economic impact is likely to be significant, but the number of affected entities is not substantial, the USFWS may also certify.

In our 2015 10(j) rule, we found that the experimental population would not have significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act. The 2015 10(j) rule expanded the geographic boundaries of the MWEPA, established new management zones with provisions for initial release and translocation of Mexican wolves, revised and added allowable forms of take, and clarified definitions. We concluded that the rule would not significantly change costs to industry or governments. Furthermore, the rule produced no adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S. enterprises to compete with foreign-based enterprises in domestic or export markets. We further concluded that no significant direct costs, information collection, or recordkeeping requirements were imposed on small entities by the action and that the rule was not a major rule as defined by 5 U.S.C. 804(2) (80 FR 2512, January 16, 2015, pp. 2553–2556).

Under this rule, we modify the population objective, establish a genetic objective, and temporarily restrict three of the forms of take of Mexican wolves in the MWEPA that we

adopted in the January 16, 2015, final 10(j) rule (80 FR 2512). We are making these revisions to ensure the experimental population contributes to the long-term conservation and recovery of the Mexican wolf. In addition, we are maintaining the nonessential designation for the experimental population.

Because of the regulatory flexibility for Federal agency actions provided by the MWEPA's 10(j) designation, we continue to expect this rule not to have significant effects on any activities within Federal, State, or private lands within the experimental population. In regard to section 7(a)(2) of the ESA, except on National Park Service and National Wildlife Refuge System lands, the population is treated as proposed for listing, and Federal action agencies are not required to consult on their activities. Section 7(a)(4) of the ESA requires Federal agencies to confer (rather than consult) with the USFWS on actions that are likely to jeopardize the continued existence of a species. However, because a nonessential experimental population is, by definition, not essential to the survival of the species, conferencing is unlikely to be required within the MWEPA. Furthermore, the results of a conference are strictly advisory in nature and do not restrict agencies from carrying out, funding, or authorizing activities. In addition, section 7(a)(1) of the ESA requires Federal agencies to use their authorities to carry out programs to further the conservation of listed species within the experimental population area. As a result, and in accordance with these regulations, some modifications to the Federal actions within the experimental population area may occur to benefit the Mexican wolf, but we do not expect projects on Federal lands to be halted or substantially modified as a result of these regulations.

This rule will result in a larger population of Mexican wolves occupying the MWEPA over the timeframe of recovery than the 2015 10(j) rule, which has the potential to affect a greater number of small entities involved in ranching and livestock production, particularly beef

cattle ranching (business activity code North American Industry Classification System (NAICS) 112111), sheep farming (business activity code NAICS 112410), and outfitters and guides (business activity code NAICS 114210). Small entities in these sectors may be affected by Mexican wolves depredating on, or causing weight loss of, domestic animals (particularly beef cattle), or preying on wild native ungulates, respectively. We have assessed impacts to small entities in the FSEIS.

Small businesses involved in ranching and livestock production may be affected by Mexican wolves depredating on domestic animals, particularly beef cattle. Direct effects to small businesses could include foregone calf or cow sales at auctions due to depredations. Indirect effects could include impacts such as increased ranch operation costs for surveillance and oversight of the herd, and weight loss of livestock when wolves are present. Ranchers have also expressed concern that a persistent presence of wolves may negatively impact their property and business values. We do not foresee a significant economic impact to a substantial number of small entities in the ranching and livestock production sector based on the information provided below.

The small size standard for beef cattle ranching entities and sheep farms as defined by the Small Business Administration are those entities with less than \$1.0 million in average annual receipts (<http://www.sba.gov/content/summary-size-standards-industry-sector>). We consider close to 100 percent of the cattle ranches and sheep farms in Arizona and New Mexico to be small entities. The 2017 Census of Agriculture reports that there were 7,057 cattle and calf operations and 7,509 sheep farms in Arizona, and 10,880 cattle and calf operations and 4,047 sheep farms in New Mexico.

Of the approximately 18,000 cattle ranches in Arizona and New Mexico, 12,334 occur in counties in the MWEPA (USDA 2017). These operations account for approximately 69 percent of the total for both States. The actual number of ranches within the project area is far less than this estimate because several counties extend beyond the borders of the project area, or the ranches occur in areas where we do not expect wolf occupancy due to low habitat suitability. The Agricultural Census does not report sub-county farms or inventory, so we rely on the county numbers as the best available data for estimating the number of potentially affected small ranching operations.

Cattle ranches vary significantly in herd size, with classifications ranging from a herd of 1 to 9 animals, to those with more than 2,500 animals (2017 Census of Agriculture). Over 80 percent of these ranches have fewer than 50 head of cattle.

We assessed whether a substantial number of entities will be impacted by the regulatory revisions for the MWEPA by estimating the annual number of depredations we expect to occur within the project area when the Mexican wolf population reaches its population objective of an average of 320 wolves. We reported in the October 29, 2021, proposed rule (86 FR 59953) that between 1998 and 2019, on average, there were 151 total depredations (confirmed and unconfirmed) by Mexican wolves in any given year, which equates to 1.7 cow/calves killed for every Mexican wolf. Based on this, we estimated the average number of cattle killed (both confirmed and unconfirmed) in any given year for 320 wolves would be 544 individuals (86 FR 59953, October 29, 2021, p. 59972). We expect the experimental population to grow from its current minimum population estimate of 186 wolves to an 8-year average population of 320 wolves. Assuming that one cow is depredated per ranch, we stated in the October 29, 2021, proposed rule that we expected the number of affected ranches to increase from 151 ranches to

544 ranches when the wolf population reaches 320 individuals. At this point, if each expected depredation affects a unique ranch, then a total of approximately 4 percent of ranches in the area would be impacted. With the addition of more recently available data (wolf population and confirmed depredations in 2020 and 2021), for this final rule, we expect the average number of cattle killed (both confirmed and unconfirmed) in any given year for 320 wolves will be 607 individuals (USFWS files), affecting up to 607 individual ranches.

To the extent that some cattle ranches will most likely not be impacted by wolf recovery because they are not located in suitable habitat but are included in the total estimate of potentially affected ranches because the Agricultural Census does not provide data at a sub-county level, this estimate could understate the percentage of ranches potentially affected. However, for other reasons, this estimate could very well overstate the percentage of cattle ranches affected as we recognize that annual depredation events have not been, and may not be, uniformly distributed across the ranches operating in occupied wolf range. Rather, wolves seem to concentrate in particular areas, and to the extent that livestock are targeted by the pack for depredations, some ranch operations will be disproportionately affected. Therefore, it is more likely that fewer than 607 ranches may experience more than one depredation, rather than each of 607 ranches experiencing one depredation.

Compared to the 2017 total inventory of estimated ranch cattle (259,192) for the project area of the Blue Range Wolf Recovery Area (BRWRA), both confirmed and unconfirmed depredations per 100 Mexican wolves account for 0.2 percent of the herd size. The economic cost of Mexican wolf depredations in this time period has been a small percentage of the total value of the livestock operations. With a population objective of an average of 320 Mexican wolves in the MWEPA, the expected value of 607 cattle (189 cattle killed per 100 Mexican

wolves on average for any year) at auction based on a weighted average market value for a depredated cow/calf of \$1,094.72 (\$2020), the total annual impact would be \$664,495. If depredations uniquely affect a separate operation, then a total of 607 operations would incur an expected corresponding loss of \$1,095.

Small businesses involved in ranching and livestock production could also be indirectly affected by weight loss of livestock due to the presence of Mexican wolves. For example, livestock may lose weight because wolves force them off suitable grazing habitat or away from water sources. Livestock may try to protect themselves by staying close together in protected areas where they are more easily able to see approaching wolves and defend themselves and their calves. A consequence of such a behavioral change would likely be weight loss, especially if the wolves are allowed to persist in the area for a significant amount of time because the cattle would be afraid to spread out to find more lucrative forage areas. Weight loss could also occur if the presence of wolves causes the herd to move around more rapidly as they try to keep away from wolves. Based on Ramler et al. 2014, weight loss of cattle is associated with the ranches that have suffered depredations. Therefore, we would expect the same ranches—that is, 607 ranches or fewer—that are impacted by depredations to potentially be impacted by weight loss of their cattle. Because wolves' tendency to prey on cattle is localized, we do not expect all 607 ranches and their associated herds to be impacted.

Using a mid-point estimate of 6 percent weight loss for calves at the time of auction, we calculated the impact on 2019 model ranches assuming that wolf presence pressures persisted throughout the foraging year. Based on mean market prices, a 6 percent weight loss for the herd at the time of sale could result in a profit loss of \$3,079 to \$16,613, depending on the size of the ranch. Under such a scenario, an affected ranch could incur a 20 percent loss in profit using the

model ranch assumptions discussed in the report. This, however, is likely an overestimate of impacts that would occur, as once wolves are detected in an area, a variety of proactive and reactive management tools are available to the landowner or the USFWS and our designated agencies such that wolf presence would not persist throughout a foraging year.

This final rule is based on alternative one in our FSEIS. Under this alternative, the experimental population regulations continue to offer several provisions for harassment and take of Mexican wolves on Federal and non-Federal land to address conflict situations between wolves and livestock, although we are temporarily restricting two of these until we reach the genetic objective of 22 released wolves surviving to breeding age. The MWEPA regulations continue to provide for the initial release of captive wolves into suitable habitat in Zones 1 and 2, and we have demonstrated our intention to reduce nuisance behavior associated with adult releases by using the cross-fostering technique. Further, depredation compensation programs are available to offset some of the economic impacts of livestock depredations; these payments fully offset the impacts of confirmed depredations for some operators but do not fully offset impacts for all operators, such as those who experience unconfirmed losses for which payment is not provided.

Based on the preceding information, we find that the impact of direct and indirect effects of Mexican wolf depredations on livestock is not significant and substantial. That is, if impacts are evenly spread, less than 5 percent of small ranches in the MWEPA will be impacted, which we do not consider to be a substantial number. If impacts are disproportionately felt (several ranchers bear the burden of the depredations), the number of affected ranches will be even less (not substantial), but the impact to those affected may be significant depending on the number of cattle on the ranch and other characteristics.

Our revision of the experimental designation may also impact small business entities associated with big game hunting, due to wolves' predation on wild ungulates, specifically elk, in the MWEPA. Effects to small businesses in this sector could occur from impacts to big game populations, loss of hunter visitation, or a decline in hunter success, leading to lost income or increased costs to guides and outfitters. We would expect impacts to big game hunting to potentially occur from the increased number of wolves in the MWEPA or from the temporary restriction of the provision for take in response to an unacceptable impact to a wild ungulate herd. Negative impacts to the big game hunting economic sector would be most likely to occur during the period that this take provision is restricted because State agencies will not be able to request the removal of wolves if they are causing ungulate herds to fall below management goals (i.e., an unacceptable impact).

As we describe in the FSEIS, we do not have a high degree of certainty as to when impacts to ungulates may occur, but we speculate based on information from gray wolves in other geographic areas that impacts will not occur prior to the wolf-to-1,000-elk ratio reaching above 4 wolves to 1,000 elk (potentially around 2024 or after). We expect to meet our genetic objective by 2030, resulting in the temporary restriction of this take provision for not more than 6 years. After the genetic objective is reached and the restriction on this take provision is lifted, the States could request the removal of wolves causing unacceptable impacts, which would result in mitigation of any reduction in hunting revenue occurring in that area. Currently, we (the Service and the State game and fish agencies) do not have information suggesting that impacts have occurred. No observable impact on wild ungulates due to wolves has been documented, nor reductions in big game hunting. In Arizona, total harvest of elk and percent success of hunters increased from 2012 to 2017 (the most recent year for which we have data) (AZGFD 2011,

2017) and stayed stable or increased slightly in New Mexico from 2012 to 2019 (NMDGF files).

For the above reasons and based on currently available information, we certify that the revision to the existing nonessential experimental population designation of the Mexican wolf will not have a significant economic impact on a substantial number of small business entities. Therefore, a regulatory flexibility analysis is not required.

*Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.):

(1) This rule will not “significantly or uniquely” affect small governments because it will not place additional requirements on any city, county, or other local municipalities. We have determined that this rule will not impose a cost of \$100 million or more in any given year on local or State governments or private entities. Therefore, a small government agency plan is not required.

(2) This rule is not a “significant regulation action” under this act; it will not produce a Federal mandate of \$100 million or greater in any year. The regulatory revisions to the MWEPA will not impose any additional management or protection requirements on the States or other entities.

*Takings—Executive Order 12630 (E.O. 12630)*

In accordance with E.O. 12630, this rule does not have significant takings implications. When reestablished populations of federally listed species are designated as nonessential experimental populations, the ESA’s regulatory requirements regarding the reestablished listed species within the experimental population are significantly reduced. In the 1998 final rule (63 FR 1752; January 12, 1998), we stated that one issue of concern is the depredation of livestock by reintroduced Mexican wolves, but such depredation by a wild animal would not be a taking

under the 5th Amendment. One of the reasons for the experimental population is to allow the agency and private entities flexibility in managing Mexican wolves, including the elimination of a wolf when there is a confirmed kill of livestock.

A takings implication assessment is not required because this rule will not effectively compel a property owner to suffer a physical invasion of property and will not deny all economically beneficial or productive use of the land or aquatic resources. Damage to private property caused by protected wildlife does not constitute a taking of that property by a government agency that protects or reintroduces that wildlife. This rule will substantially advance a legitimate government interest (conservation and recovery of a listed species) and will not present a barrier to all reasonable and expected beneficial use of private property.

*Federalism—Executive Order 13132 (E.O. 13132)*

In accordance with E.O. 13132, we have considered whether this rule has significant federalism effects and have determined that a federalism summary impact statement is not required. This rule will not have substantial direct effects on the States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government. In keeping with Department of the Interior policy, we requested information from and coordinated development of this rule with the affected resource agencies in New Mexico and Arizona. Achieving the population objective for the MWEPA, which serves as one of the recovery criteria for the Mexican wolf, will contribute to the rangewide recovery of the species, which will contribute to its eventual delisting and its return to State management. No intrusion on State policy or administration is expected, roles or responsibilities of Federal or State governments will not change, and fiscal capacity will not be substantially or directly affected. This rule will operate to maintain the existing relationship

between the State and the Federal Government. Therefore, this rule does not have significant federalism effects or implications to warrant a federalism assessment under the provisions of E.O. 13132.

*Civil Justice Reform—Executive Order 12988 (E.O. 12988)*

In accordance with E.O. 12988 (February 7, 1996; 61 FR 4729), the Office of the Solicitor has determined that this rule will not unduly burden the judicial system and will meet the requirements of sections (3)(a) and (3)(b)(2) of the E.O.

*Paperwork Reduction Act*

This rule does not contain any new collection of information that requires approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). OMB has previously approved the information collection requirements associated with permitting and reporting requirements associated with native endangered and threatened species, and experimental populations, and assigned the following OMB control numbers:

- 1018–0094, “Federal Fish and Wildlife Permit Applications and Reports—Native Endangered and Threatened Species; 50 CFR 10, 13, and 17” (expires 01/31/2024), and
- 1018–0095, “Endangered and Threatened Wildlife, Experimental Populations, 50 CFR 17.84” (expires 9/30/2023).

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

*Government-to-Government Relationship with Tribes*

In accordance with the President’s memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive

Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we have considered possible effects of the revisions in this rule on federally recognized Indian Tribes. Our revisions do not include a revision to the geographic boundaries of the MWEPA, and we continue to recognize that the MWEPA overlaps with or is adjacent to Tribal lands. We notified the Native American Tribes within and adjacent to the MWEPA about this rule and invited eight Indian Tribes to serve as cooperating agencies in the development of the DSEIS. We communicated with all Indian Tribes in Arizona and New Mexico, as well as Tribes outside of Arizona and New Mexico that may have interest in land within the MWEPA, through written contact, including informational mailings from the USFWS and email notifications to attend video and teleconference informational sessions and public hearings, and to provide an opportunity to comment on the DSEIS and proposed rule. We invited all Tribes in Arizona and New Mexico to request government-to-government consultation under Secretarial Order 3206, and we held Tribal Working Group meetings, open to all Tribes, to discuss our proposed revisions within the context of Tribal land. If future activities resulting from this rule may affect Tribal resources, the USFWS will communicate and consult on a government-to-government basis with any affected Native American Tribes in order to find a mutually agreeable solution.

#### *National Environmental Policy Act*

We have prepared a final supplemental environmental impact statement (FSEIS) pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) in connection with this rule to revise the Mexican wolf experimental population designation. The purpose of the FSEIS is to identify and disclose the environmental consequences resulting from the revision of the existing experimental population designation of the Mexican wolf. The FSEIS is an

outgrowth of the public scoping process we conducted from April 15, 2020, to June 15, 2020 (85 FR 20967; April 15, 2020), and the public and peer review comments we received on the draft supplemental environmental impact statement (DSEIS) (see 86 FR 60029; October 29, 2021) and our October 29, 2021, proposed rule (86 FR 59953). We used the FSEIS, which we published in the *Federal Register* on May 13, 2022 (87 FR 29272), to inform our final decision on the revision to the regulations for the experimental population of Mexican wolves in the MWEPA. *Energy Supply, Distribution, or Use—Executive Order 13211 (E.O. 13211)*

E.O. 13211 requires agencies to prepare statements of energy effects when undertaking certain actions. This rule is not expected to significantly affect energy supplies, distribution, or use because this rule allows the reintroduction and management of Mexican wolves. Mexican wolves reintroduced and managed in the MWEPA do not change where, when, or how energy resources are produced or distributed. Because this action is not a significant energy action, no statement of energy effects is required.

### **References Cited**

A complete list of all references cited in this rule is available at <https://www.regulations.gov> at Docket No. FWS-R2-ES-2021-0103, or upon request from the Mexican Wolf Recovery Program, U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

### **Authors**

The primary authors of this document are the staff members of the Mexican Wolf Recovery Program (see **FOR FURTHER INFORMATION CONTACT**).

## Authority

The authorities for this action are the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), as amended, and the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

## Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

### PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

2. Amend § 17.84, in paragraph (k), by:

a. Revising paragraph (k)(1);

b. Adding paragraphs (k)(7)(iv)(C)(1) and (2);

c. Redesignating paragraphs (k)(7)(v)(A)(1) and (2) as (k)(7)(v)(A)(3) and (4);

d. Adding new paragraphs (k)(7)(v)(A)(1) and (2), and (k)(7)(vi)(E);

e. Revising paragraph (k)(9)(iii);

f. Adding paragraph (k)(9)(v); and

g. Revising paragraph (k)(10).

The revisions and additions read as follows:

#### § 17.84 Special rules—vertebrates.

\* \* \* \* \*

(k) \* \* \*

(1) *Purpose of the rule.* The U.S. Fish and Wildlife Service (USFWS) finds that reestablishment of an experimental population of Mexican wolves into the subspecies' probable

historical range will further the conservation and recovery of the Mexican wolf subspecies. The USFWS also finds that the experimental population is not essential under § 17.81(c)(2).

\* \* \* \* \*

(7) \* \* \*

(iv) \* \* \*

(C) \* \* \*

(I) Until the USFWS has achieved the genetic objective for the MWEPA set forth at paragraph (k)(9)(v) of this section by documenting that at least 22 released wolves have survived to breeding age in the MWEPA, the USFWS or a designated agency may issue permits only on a conditional, annual basis according to the following provisions: Either

(i) Annual release benchmarks (for the purposes of this paragraph, the term “benchmark” means the minimum cumulative number of released wolves surviving to breeding age since January 1, 2016, as documented annually in March) have been achieved based on the following schedule:

**Table 1 to paragraph (k)(7)(iv)(C)(I)(i)**

Year	Benchmark
2021	7
2022	9
2023	11
2024	13
2025	14
2026	15
2027	16
2028	18
2029	20
2030	22

; or

(ii) Permitted take on non-Federal land, or on Federal land under paragraph (k)(7)(v) of this section, during the previous year (April 1 to March 31) did not include the lethal take of any

released wolf or wolves that were or would have counted toward the genetic objective set forth at paragraph (k)(9)(v) of this section.

(2) After the USFWS has achieved the genetic objective set forth at paragraph (k)(9)(v) of this section, the conditional annual basis for issuing permits will no longer be in effect.

(v) \* \* \*

(A) \* \* \*

(I) Until the USFWS has achieved the genetic objective for the MWEPA set forth at paragraph (k)(9)(v) of this section by documenting that at least 22 released wolves have survived to breeding age, the USFWS or a designated agency may issue permits only on a conditional, annual basis according to the following provisions: Either

(i) Annual release benchmarks (for the purposes of this paragraph, the term “benchmark” means the minimum cumulative number of released wolves surviving to breeding age since January 1, 2016, as documented annually in March) have been achieved based on the following schedule:

**Table 2 to paragraph (k)(7)(v)(A)(I)(i)**

Year	Benchmark
2021	7
2022	9
2023	11
2024	13
2025	14
2026	15
2027	16
2028	18
2029	20
2030	22

; or

(ii) Permitted take on Federal land, or on non-Federal land under paragraph (k)(7)(iv) of this section, during the previous year (April 1 to March 31) did not include the lethal take of any

released wolf or wolves that were or would have counted toward the genetic objective set forth at paragraph (k)(9)(v) of this section.

(2) After the USFWS has achieved the genetic objective set forth at paragraph (k)(9)(v) of this section, the conditional annual basis for issuing permits will no longer be in effect.

\* \* \* \* \*

(vi) \* \* \*

(E) No requests for take in response to unacceptable impacts to a wild ungulate herd may be made by the State game and fish agency or accepted by the USFWS until the genetic objective at paragraph (k)(9)(v) of this section has been met.

\* \* \* \* \*

(9) \* \* \*

(iii) Based on end-of-year counts, we will manage to achieve and sustain a population average greater than or equal to 320 wolves in Arizona and New Mexico. This average must be achieved over an 8-year period, the population must exceed 320 Mexican wolves each of the last 3 years of the 8-year period, and the annual population growth rate averaged over the 8-year period must demonstrate a stable or increasing population, as calculated by a geometric mean.

\* \* \* \* \*

(v) The USFWS and designated agencies will conduct a sufficient number of releases into the MWEPA from captivity to result in at least 22 released Mexican wolves surviving to breeding age.

(10) *Evaluation.* The USFWS will continue to evaluate Mexican wolf reestablishment progress and prepare periodic progress reports and detailed annual reports. In addition, approximately 5 years after [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN

THE FEDERAL REGISTER], the USFWS will prepare a one-time overall evaluation of the experimental population program that focuses on modifications needed to improve the efficacy of this rule and the progress the experimental population is making to the recovery of the Mexican wolf.

\* \* \* \* \*

**Martha Williams,**  
*Director,*  
*U.S. Fish and Wildlife Service.*