

## LIST OF FIGURES AND TABLES

- Figure ES-1. Geographic boundaries for the nonessential experimental population of the Mexican wolf as established under the 1998 Final Rule.
- Figure ES-2. Alternative One (Proposed Action and Preferred Alternative)
- Figure ES-3. Alternative Two
- Figure ES-4. Alternative Three
- Figure ES-5. Alternative Four (No Action)
- Figure 1-1. Mexican wolves
- Figure 1-2. Saddle Pack litter at the Sevilleta Wolf Management Facility Facility
- Figure 1-3. The Sevilleta Wolf Management Facility
- Figure 1-4. Geographic boundaries for the nonessential experimental population of the Mexican wolf as established under the 1998 Final Rule.
- Figure 1-5. Blue Range Wolf Recovery Area sign
- Figure 1-6. Mixed conifer forest within the Blue Range Wolf Recovery Area
- Figure 1-7. Elk in the Blue Range Wolf Recovery Area
- Figure 1-8. Black bear and Mexican wolf in the Blue Range Wolf Recovery Area
- Figure 1-9. Cattle grazing in the Blue Range Wolf Recovery Area
- Figure 1-10. Helicopter count and capture methods
- Figure 1-11. Non-lethal munitions
- Figure 1-12. Range rider, fladry and fencing
- Figure 1-13. Fladry and fencing
- Figure 1-14. Transport by mule into wilderness area release site
- Figure 1-15. Pair of Mexican wolves inside a modified soft release pen
- Figure 1-16. A Mexican wolf being processed and fitted with a radio-telemetry collar
- Figure 1-17. Trail camera picture used for remote monitoring
- Figure 1-18. Release of a collared Mexican wolf
- Table 1-1. Mexican Wolf Experimental Population Releases, Removals and Translocations (Blue Range Wolf Recovery Area and Fort Apache Indian Reservation) from 1998 to 2012
- Figure 1-19. Mexican wolves in the Blue Range Wolf Recovery Area observed from aircraft during January end of year count
- Figure 1-20. Potential reintroduction areas in northern Mexico.
- Table 1-2. Mexican Wolf Experimental Population Growth from 1998 to 2013
- Table 1-3. Mexican Wolf Experimental Population Growth Rate from 1998 to 2013

Table 1-4. Population Projections Compared to Mexican Wolf End of Year Minimum Population Counts in New Mexico and Arizona from 1998 to 2013

Table 1-5. Success Rate and Number of Initial Releases of Mexican Wolves in the Blue Range Wolf Recovery Area from 1998 to 2013

Figure 1-21. Areas of suitable wolf habitat in the proposed expanded Mexican Wolf Experimental Population Area south of I-40 in Arizona and New Mexico

Figure 1-22. Mexican Wolf in the Blue Range Wolf Recovery Area

Figure 2-1. Alternative One (Proposed Action and Preferred Alternative)

Figure 2-2. Alternative One: Phase 1

Figure 2-3. Alternative One: Phase 2

Figure 2-4. Alternative One: Phase 3

Figure 2-5. Alternative Two

Figure 2-6. Alternative Three

Figure 2-7. Alternative Four (No Action)

Table 2-1. Tabular Comparison of the Actions of the Proposed Action and Alternatives

Table 2-2. Summary and Comparison of the Environmental Consequences by Alternative.

Figure 3-1. Suitable habitat for the Mexican wolf in Arizona and New Mexico within project study area.

Figure 3-2. Suitable Mexican wolf habitat in Arizona and New Mexico Counties by Zone (Proposed Action/Alternative One).

Table 3-1. Table of land ownership: Arizona and New Mexico.

Table 3-2. Percentage of Federal land in counties within project study area. Credit: USGS 2012.

Figure 3-3. Federal land with suitable wolf habitat in proposed expanded MWEPA.

Figure 3-4. National Forests with suitable habitat in proposed expanded MWEPA.

Figure 3-5. Other Federal land with suitable wolf habitat in proposed expanded MWEPA.

Figure 3-6. Tribal trust land with suitable wolf habitat within proposed expanded MWEPA.

Figure 3-7. State and private land with suitable wolf habitat within proposed expanded MWEPA.

Figure 3-8. Physiographic Provinces of Arizona.

Figure 3-9. Physiographic provinces of New Mexico.

Figure 3-10. Elk Distribution in Arizona by Game Management Unit.

Figure 3-11. Arizona demographic ratios of elk for 10 “herd units” in the MWEPA between 2002 and 2012.

Table 3-3. Elk population estimates (2013) and demographic ratios of 10 “herd units” in the Arizona portion of the MWEPA.

Figure 3-12. East End Calf to Cow Ratios on the Fort Apache Indian Reservation 1996-2013.

Figure 3-13. Southern New Mexico Elk Herd Units.

Figure 3-14. Demographic ratios of mule deer in AZ in the MWEPA between 2002 and 2012.

- Figure 3-15. White-tailed deer distribution in Arizona by Game Management Unit.
- Table 3-4. 2013 Minimum Population Estimates From Reconstructed Harvest Data of Deer (Including mule deer and white-tailed deer combined) in New Mexico
- Figure 3-16. County Population Change 2000-2010, Arizona and New Mexico.
- Table 3-5. General Socio-economic Profile for Arizona and New Mexico.
- Figure 3-17. Total Inventory: Cattle Including Calves.
- Figure 3-18. Sales Figures Arizona and New Mexico, 1998-2012.
- Figure 3-19. Arizona and New Mexico Cattle and Calf Farms by Size, All Operations, 2012.
- Figure 3-20. Arizona and New Mexico Estimated Range Cattle Operations by Size, 2012.
- Figure 3-21. AZ and NM Inventory by Herd Size.
- Table 3-6: Cattle and Calf Herd Size and Inventory by Farm Size for Counties in the BRWRA (2012).
- Figure 3-22. US Forest Service Permitted and Authorized Use in Arizona and New Mexico.
- Figure 3-23. Permitted and Authorized use in Apache-Sitgreaves and Gila National Forests.
- Table 3-7: Sheep and Lamb Herd Size and Inventory by Farm Size for Counties in the BRWRA (2012).
- Table 3-8: Hunting Activity in Arizona and New Mexico, 2011, 2001
- Table 3-9: Arizona Big Game Hunting, 2000 – 2010.
- Figure 3-24. Big Game Arizona Hunting Success Rates, 2000 – 2010.
- Table 3-10. New Mexico Deer and Elk Hunters and Harvest.
- Figure 3-25. New Mexico Elk and Deer Harvest Success Rate.
- Figure 3-26. Blue Range Wolf Recovery Area Game Management Units.
- Figure 3-27. New Mexico BRWRA Hunters and Elk Harvest.
- Figure 3-28. New Mexico BRWRA Annual Elk Harvest Success Rate.
- Table 3-11. Overall Elk Hunting Success Rates – Year Over Year Change, New Mexico BRWRA GMUs: New Mexico Game and Fish Department, unpublished data.
- Table 3-12. State of New Mexico – BRWRA Elk Hunting Statistics.
- Figure 3-29. Arizona BRWRA Hunters and Elk Harvest.
- Figure 3-30. Arizona BRWRA Elk Harvest Success Rate.
- Table 3-13. Arizona Hunter and Harvest in the BRWRA (2007 – 2011). Source: Hunt Arizona
- Table 3-14. Away-From-Home Wildlife Watching Participants by Wildlife Observed, Photographed, or Fed.
- Table 3-15. Expenditures by State Residents and Nonresidents Combined for Wildlife Watching (2011).
- Figure 3-31. Visitor Activity Breakdown – Apache-Sitgreaves National Forest, FY 2007.
- Table 3-16. Visitor Activity Participation and Hours, FY 2007. Apache-Sitgreaves National Forest.
- Figure 3-32. Visitor Activity Breakdown – Gila National Forest, FY 2007.
- Table 3-17. Visitor Activity Participation and Hours, FY2007, Gila National Forest.

Table 3-18. Percentage of American Indian and Hispanics in Arizona and New Mexico.

Table 3-19. Comparison of Low Income Elements for the states of New Mexico and Arizona to the National Average.

Table 3-20: Percentage of American Indians or Hispanics in counties within the project study area (CENSUS 2012 a)

Table 3-21: Comparison of Low Income Elements for New Mexico and Arizona counties within the project study area to the National Average.

Table 3-22: Population and Labor Force statistics for Tribes within project study with trust lands that have suitable habitat for wolves; Minority population groups of concern within economic sectors potentially affected by the proposed action and alternatives

Table 3-23 Minorities in Beef Cattle Farms: Principal Operator (USDA 2012)

Table 4-1. Potential Economic Effects of Mexican Wolves on Ranching Establishments

Table 4-2. Confirmed Mexican Wolf Cattle Depredations 1998 -2012.

Figure 4-1. Annual Depredations per Mexican Wolf Confirmed Cattle Kills.

Table 4-3. Development of Medium Estimate: Ratios of Estimated Total Livestock Losses to Confirmed Kills.

Table 4-4. Estimated Total Mexican Wolf Cattle Depredations in the Blue Range Wolf Recovery Area 1998 – 2012.

Figure 4-2. Cattle, Calves – Price Received. Measures in \$2012/CWT.

Figure 4-3. Cattle, Greater than or Equal to 500 Pounds – Price measured in hundred weight.

Table 4-6. Estimated Market Value for the Total Estimated Number of Depredated Cattle (Confirmed and Unconfirmed) 1998 – 2012, \$2013.

Figure 4-4. National Hay Harvest and Prices (\$2013) 1996 – 2012.

Table 4-7. Model Ranch Baseline Operation Assumptions.

Table 4-8. Model Ranch Analysis Results.

Table 4-9. Economic Cost of Compensation Claim Preparation for Confirmed Cattle Depredations in the BRWRA. .

Table 4-10. Financial Effect of Six Percent Weight Loss on Model Ranch Herd at Time of Sale.

Table 4-11. Total Economic Impact of Mexican Wolves on Cattle Ranching Operations in the BRWRA.

Table 4-12. Estimated Uncompensated Cattle Livestock Operation Losses 1998 – 2012 (\$2013).

Figure 4-5. Yellowstone National Park northern range elk and wolf counts, 1995–2012.

Figure 4-6. Reproductive values of female northern Yellowstone elk and age distributions of hunter (Gardiner Late Hunt, 1996–2001) and wolf-killed females (1995– 2001)

Table 4-13. Mexican Wolf Effects on Elk Hunting in the BRWRA - Summary of Conclusions

Table 4-14. Alternative 1: Mean Estimates for Economic Impact on Ranching Activities.

Table 4-15. Alternative 2: Mean Estimates for Economic Impact on Ranching Activities.

Table 4-16. Alternative Three: Mean Estimates for Economic Impact on Ranching Activities.

Table 4-17. No Action Alternative: Mean Estimates for Economic Impact on Ranching Activities.

Figure 4-7. Source-Pathway-Receptor-Acceptance Model

Figure D-1. Comparison of experimental Mexican wolf population from 1998-2013 (Year 1 to Year 16) and projected into the future (Year 17 to Year 38) under different alternatives relative to other recovering wolf populations.

Table D-1. Density estimate of Mexican wolves in BRWRA and FAIR.

Table D-2. Experimental population projection at 10% annual growth until the population goals of 300-325 wolves are achieved.

Figure D-2. Map of release restrictions in Zone 1 under Alternative One (black and red polygons), Alternative Two (black polygon only), and Alternative Three (black and red polygons) and current release sites approved within the BRWRA (Orange and Yellow Dots).

Table D-3. Experimental population projection at 10% annual growth until the density achieves approximately 8.0 wolves per 1000 km<sup>2</sup>.

Table D-4. Experimental population projection at 11% annual growth until the density achieves approximately 8.0 wolves per 1000 km<sup>2</sup>.

Figure G-1. Revised Mexican Wolf Experimental Population Area.

Figure G-2. Suitable habitat of the Mexican wolf south of Interstate 40 (I-40) in Arizona and New Mexico.

Figure G-3. Revised Geographic Boundaries for the Mexican Wolf Nonessential Population Area

Table G-1. List of Species Unaffected the Proposed Action