Mexican Wolf Recovery Program:
Progress Report #12

Reporting Period: January 1 – December 31, 2009

Prepared by: The U.S. Fish and Wildlife Service

Cooperators: Arizona Game and Fish Department, New Mexico Department of Game and Fish, USDA-APHIS Wildlife Services, US Forest Service, and White Mountain Apache Tribe

Mexican Wolf F1154. Mexican Wolf Interagency Field Team Photo.

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Foreword

The U.S. Fish and Wildlife Service (Service) is the lead agency responsible for recovery of the Mexican wolf *(Canis lupus baileyi),* pursuant to the Endangered Species Act. The Mexican Wolf Recovery Program essentially is separated into two, interrelated components: 1) Recovery – includes aspects of the program administered primarily by the Service that pertain to the overall goal of Mexican wolf recovery and delisting from the list of threatened and endangered species, and 2) Reintroduction – includes aspects of the program implemented by the Service and cooperating States and Tribes that pertain to management of the reintroduced Mexican wolf population in the Blue Range Wolf Recovery Area (BRWRA), which consists of the entire Apache and Gila National Forests in Arizona and New Mexico. This report details all aspects of the Mexican Wolf Recovery Program. The reporting period for this progress report is January 1 – December 31, 2009.

Background

The Mexican wolf, or "lobo," is the smallest, rarest, southernmost occurring, and most genetically distinct subspecies of the North American gray wolf. It once occurred in the mountainous regions of the Southwest from central Mexico throughout portions of Texas, New Mexico, and Arizona, and perhaps even farther north, as suggested by more recent research. Mexican wolves were extirpated from the wild in the United States by 1970, primarily as a result of a concerted effort to eradicate them due to livestock conflicts. Recovery efforts for the Mexican wolf began when it was listed as an endangered species in 1976. A captive breeding program was initiated and saved the Mexican wolf from extinction with the capture of the last five remaining Mexican wolves in the wild in Mexico from 1977 - 1980.

A Mexican Wolf Recovery Team was convened in 1979 to write a recovery plan, which was approved by the Service in 1982. The recovery plan contains objectives for maintaining a captive population and reestablishing Mexican wolves within their historic range. In June 1995, with the captive population numbers secure, the Service released a draft Environmental Impact Statement (EIS) entitled: *Reintroduction of the Mexican wolf within its Historic Range in the Southwestern United States*. After an extensive public review and comment period, the Final EIS was released in December 1996.

In March 1997, the Secretary of the Interior signed a Record of Decision approving the Service's preferred alternative in the EIS to release captive-reared Mexican wolves into a portion of the BRWRA. The Mexican wolf Final Rule - Establishment of a Nonessential Experimental Population of the Mexican Gray Wolf in Arizona and New Mexico (Final Rule) - was published in the Federal Register on January 12, 1998, and provided regulations for how the reintroduced population would be managed (US Fish and Wildlife Service 1998). On March 29, 1998, the first Mexican wolves were released into the wild. All wolves within the BRWRA are designated as a nonessential experimental population under section 10(j) of the Endangered Species Act which allows for greater management flexibility to address potential conflicts such as livestock depredations and nuisance behavior. An Interagency Field Team (IFT) comprised of members from the Service, Arizona of Game and Fish Department (AGFD), New Mexico Department of Game and Fish (NMDGF), White Mountain Apache Tribe (WMAT), US Forest Service, and

U.S. Department of Agriculture-Wildlife Services (USDA-WS) has been formed to monitor and manage the reintroduced population.

Mexican Wolf F903. Mexican Wolf Interagency Trail Camera Photo.

PART A: RECOVERY ADMINISTRATION

1. Mexican Wolf Captive Breeding Program

a. Mexican Wolf Species Survival Plan

The 1982 Mexican Wolf Recovery Plan contains the objective of establishing and maintaining a captive breeding program as an essential component of recovery (US Fish and Wildlife Service 1982). A captive breeding program was initiated in 1977 through 1980 with the capture of the five remaining wild Mexican wolves in Mexico. The captive breeding program is managed for the Service under the American Zoological and Aquarium Association's (AZAA) Mexican Wolf Species Survival Plan (SSP) program. The SSP is a bi-national (United States and Mexico) captive breeding program. Its mission is to reestablish the Mexican wolf in the wild through captive breeding, public education, and research. The SSP designation is significant because it indicates to AZAA member facilities the need for the species to be conserved, and triggers internal support to member facilities to help conserve such imperiled species. The SSP is the sole source population to reestablish the species in the wild, thus, without the SSP recovery of the Mexican wolf would not be possible. The SSP has been extremely successful and has steadily expanded throughout the years. In 2009, there were approximately 320 captive Mexican wolves managed in 49 facilities in the United States and Mexico. The SSP members routinely transfer Mexican wolves to facilitate genetic exchange and maintain the health and genetic diversity of the captive population.

Mexican Wolf F1167. Photo courtesy of Jackie Fallon, Wild Canid Survival and Research Center.

The SSP's goal of housing a minimum of 240 wolves ensures the security of the species in captivity and produces surplus animals for reintroduction. Potential Mexican wolf release candidates are sent to one of three pre-release facilities (see below) where they are evaluated for release suitability and undergo an acclimation process. All wolves selected for release are genetically redundant to the captive population, meaning their genes are already well represented. This minimizes any adverse effects to the genetic integrity of the captive population, in the event that wolves released to the wild do not survive.

Each July, the SSP holds a bi-national meeting to plan and coordinate wolf breeding, transfers and related activities among facilities. The location of these meetings alternates between Mexico and the United States. In 2009, the annual SSP meeting was held in Creel, Mexico and hosted by the Subcomite Technico Consultivo Nacional para la Recuperacion del Lobo Mexicano, SEMARNAT (CGVS), CONANP, and the Universidad Autónoma Metropolitana.

b. Mexican Wolf Pre-Release Facilities

Mexican wolves are acclimated prior to release to the wild at Service-approved facilities designed to house wolves in a manner that fosters wild characteristics and behaviors. These facilities are the Ladder Ranch and Sevilleta Wolf Management Facilities, located in New Mexico near the BRWRA, and Wolf Haven International, located in Tenino, Washington. At these facilities, wolves are managed with minimal exposure to humans for the purpose of minimizing habituation to humans and maximizing pair bonding, breeding, pup rearing, and healthy pack structure development. They are evaluated and selected for release to the wild based on genetic makeup, reproductive performance, behavior, physical suitability, and overall response to the adaptation process. These facilities have been successful in breeding wolves for release and are integral to Mexican wolf recovery efforts. To further minimize habituation to humans, public visitation to the Ladder Ranch and Sevilleta facilities is not permitted.

Release candidates are sustained on a zoo-based diet of carnivore logs and a kibble diet formulated for wild canids. Diets of release candidates are supplemented with carcasses of road-killed ungulate species, such as deer and elk, and scraps from local game processors (meat, organs, and bones) from wild game/prey species only. Release candidates are given annual examinations to vaccinate for canine diseases (e.g., parvo, corona, adeno2, parinfluenza, distemper and rabies viruses, etc.) and to evaluate overall health conditions, and are treated for other veterinary purposes on an as-needed basis.

Sevilleta Wolf Management Facility (SWMF)

The SWMF is located on the Sevilleta National Wildlife Refuge (SNWR) near Socorro, New Mexico and is the only Mexican wolf pre-release facility managed entirely by the Service. There are a total of eight enclosures, ranging in size from 0.25 acre to approximately 1.25 acres, and a quarantine pen. In 2009 the staff of SNWR continued to assist in the maintenance and administration of the SWMF. Through the course of the year, 37 individual wolves were housed at the SWMF. Of these, two wolves were released into the BRWRA (one of which was returned to the SWMF within the year), and eleven wolves were retired into the SSP. Thirteen deaths occurred at the SWMF, eleven of which were stillborn or two-to-three week old pups. Of the

remaining two deaths, one adult died from complications associated with nasal carcinoma, and one five month old pup died from unknown causes. At year's end, the SWMF housed 12 wolves.

Ladder Ranch Wolf Management Facility (LRWMF)

The LRWMF, owned by R. E. Turner, is located on the Ladder Ranch near Truth or Consequences, New Mexico. There are a total of five enclosures, ranging in size from 0.25 acre to 1.0 acre. The LRWMF is maintained by an employee of the Turner Endangered Species Fund (TESF), though the facility is managed and supported financially by the Service to keep it operating and available for housing and pre-conditioning release candidates. During 2009, 10 individual wolves were housed at the LRWMF. No wolves were released or transferred, and at year's end, the LRWMF housed 10 wolves.

Wolf Haven International (WHI)

The WHI is located in Tenino, Washington. There are 2 Mexican wolf pre-release enclosures at the facility, each just over 0.50 acre in size. Management and funding is supported entirely by WHI. The pre-release enclosures are entirely off exhibit, though WHI does house other gray wolves on display for viewing and educational purposes. During 2009, WHI housed 10 individual Mexican wolves in the pre-release enclosures. None of these wolves were released into the BRWRA, and there were no births or deaths. At year's end, WHI housed 10 Mexican wolves in the pre-release enclosures.

Mexican Wolf M166. Photo Courtesy of the California Wolf Center. Note: M166 was first released to the wild in 1998, and was permanently removed in 2001. M166 was retired to the California Wolf Center and lived to be 15 years old. M166 died on May 28, 2009.

2. Recovery Planning

On April 1, 2003, the Service published a final rule revising the listing status of the gray wolf across most of the conterminous United States (68 Federal Register 15804). Within that rule, the Service established three distinct population segments (DPS) for the gray wolf. Gray wolves in the Western DPS and the Eastern DPS were reclassified from endangered to threatened, except where already classified as threatened or as an experimental population. Mexican wolves in the Southwestern DPS retained their previous endangered or experimental population status. Under this ruling, the Southwestern DPS became the listed entity to base recovery planning. The Service's Southwest Region formed a Southwestern DPS Recovery Team in July 2003 to develop a recovery plan for the Southwestern DPS that would address recovery actions for the Mexican wolf. The Service intended the Southwestern DPS recovery plan to supersede and replace the 1982 Mexican Wolf Recovery Plan which does not contain recovery (downlisting or delisting) criteria. The team met five times between October 2003 and October 2004 and made progress towards developing the recovery plan. On January 31 and August 19, 2005, U.S. District Courts in Oregon and Vermont, respectively, ruled that the April 1, 2003, final rule violated the Endangered Species Act (*Defenders of Wildlife v. Norton*, 1:03-1348-JO, D.OR2005 and *National Wildlife Federation v Norton*, 1:03-CV-340, D.VT.2005). The Courts' rulings invalidated the revisions of the gray wolf listing. Therefore, the status of gray wolves outside of Minnesota and outside of areas designated as nonessential experimental populations reverted back to endangered (as had been the case prior to the 2003 reclassification). The Courts also invalidated the three DPS designations in the April 1, 2003, rule and the associated special regulations.

In response to these rulings, the Service placed the Southwestern DPS Recovery Team on hold, because its charge to develop a recovery plan for the Southwestern DPS was no longer valid since the DPS no longer existed. The Service instructed the Recovery Team that its work could not continue until legal issues were resolved at the national level. On December 16, 2005, the Department of Interior issued a statement that the Service would not appeal the 2005 U.S. District Courts' decisions on the reclassification of the gray wolf.

Since the April 1, 2003, final rule was rendered invalid in 2005, the Service has been involved in several listing activities that have resolved neither the nationwide status of the gray wolf nor the listing status of the Mexican wolf. In light of this uncertain status, the Service has not resumed recovery planning for the Mexican wolf. The Service did initiate a process to compile and assess the data generated by past recovery planning efforts. The result of this process is the Mexican Gray Wolf Conservation Assessment, a non-regulatory document containing a synthesis and summary of data generated during all previous recovery planning for the Mexican wolf. Preparation of the Conservation Assessment began in April of 2008, and the draft document was released for public and peer review in 2009. The final Conservation Assessment is anticipated to be released in the first quarter of 2010. The data presented in the Conservation Assessment should streamline future recovery planning for the Mexican wolf.

The invalidation of the 2003 final rule, and court opinions on subsequent rules (see section 6, "Litigation," for further information) attempting to address the Northern Rockies and Great Lakes wolf populations, displayed the need to take a more comprehensive look at how best to recover wolves in the contiguous United States. Thus, a team of Service biologists, led by

experts in structured decision making from the United States Geological Survey, and administrators in affected regions, undertook a comprehensive evaluation of a suite of alternative gray wolf listing classifications, including the existing classification, using decision analytical techniques. At the end of 2008 and throughout 2009 the group met to evaluate and discuss the alternatives, including a convening of experts on Mexican wolf biology and management to apply a DPS or subspecies tradeoff analysis to the Mexican wolf.

In addition, the structured decision making team undertook a preliminary status assessment of the geographic units identified by the analysis, to plan how to proceed with further assessment and regulatory action. This most recent workshop did not result in a consensus solution for wolf listing nationwide, although many issues were resolved and a constrained range of alternatives was established. Although the team has not reached consensus for wolf listing nationwide, it is generally agreed upon that the Southwest qualifies as a listable entity at either the Mexican wolf subspecies level, or as a DPS, and is a desired part of the distribution of wolves in North America.

At this time the Directorate supports proceeding with the wolf structured decision making project, with the team focusing on resolving remaining uncertainties. The expectation is the team will continue to address the remaining unresolved issues, complete the analysis, and make a final recommendation to the Director of the Service.

3. Blue Range Wolf Reintroduction Project Structure

In 2003, the Mexican Wolf Recovery Program was restructured to allow States and Tribes to assume lead responsibility for implementing the BRWRA Reintroduction Project on lands under their jurisdiction. Under this structure the BRWRA Reintroduction Project is managed jointly by the AGFD, NMDGF, USDA-Forest Service, USDA-WS, WMAT, and the Service. Other cooperators include Graham, Greenlee, and Navajo Counties in Arizona, Sierra County in New Mexico, and the New Mexico Department of Agriculture. The agencies work together under a Memorandum of Understanding (MOU) which defines and formalizes the role of each cooperator in the program. An Adaptive Management Oversight Committee (AMOC), consisting of members from each of the cooperating agencies, provides guidance to the Interagency Field Team (IFT) on policy issues related to the management of Mexican wolves in the BRWRA and coordinates the BRWRA reintroduction project between the various entities and the public. The AMOC has been chaired by AGFD since inception, and that chairmanship continued in 2009. Under this structure the IFT is guided by 27 Standard Operating Procedures and provides management for the free-ranging wolf population. Each year the IFT produces an Annual Report, detailing Mexican wolf field activities (e.g., population status, reproduction, mortalities, releases/translocations, dispersal, depredations, etc.) in the BRWRA. The 2009 report is included as PART B of this report. Monthly BRWRA project updates are available at *http://www.fws.gov/southwest/es/mexicanwolf* or you may sign up to receive them electronically by visiting *http://azgfd.gov/signup*. Additional information about the BRWRA Reintroduction Project can be found on AGFD's web page at: *http://azgfd.gov/wolf*.

The 2003 restructuring of the program also included the creation of an Adaptive Management Working Group (AMWG). AMWG is comprised of any member of the interested public. The

purpose of the AMWG is to provide a forum for all interested parties to participate in the BRWRA Reintroduction Project. Specifically, AMWG functions to enhance communication between management agencies and interested parties and create opportunities for participants to identify local issues and concerns and provide input regarding the management effectiveness of the BRWRA Reintroduction Project. AMWG meetings are hosted quarterly throughout the year by the AMOC in an open forum accessible to any interested party to discuss pertinent Mexican wolf management issues specific to the BRWRA. Meetings alternate between Arizona and New Mexico.

In December, 2009 the Service finalized a settlement agreement with plaintiffs Wild Earth Guardians and Defenders of Wildlife. In the Consent Decree, the Service agreed to make no further decisions that relate to the Mexican Wolf Recovery Program pursuant to the MOU that created AMOC, and to Standard Operating Procedure 13.0: Control of Mexican Wolves (see section 6, "Litigation," for further discussion). At year's end the Service was no longer a signatory to the MOU that established AMOC. The Service is working with its partners and cooperators to prepare a new MOU that adheres to the Consent Decree while upholding its commitment to the many agencies involved in the recovery of the Mexican wolf.

4. Cooperative Agreements and Contracts

In 2009, the Service sustained cooperative agreements with AGFD, NMDGF, TESF, WMAT, and the San Carlos Apache Tribe (SCAT) via formal agreements with each entity. Agreements with AGFD and NMDGF have been matching agreements where the Service provides 75% of costs and each state agency provides 25%. The Service no longer funds USDA-WS because of the Congressional funding they now receive for responding to livestock conflict situations caused by Mexican wolves in the BRWRA.

Cooperator	Amount Funded by USFWS from Mexican Wolf Project Funds
AGFD	$175,000
NMDGF	$ 100,000
WMAT	$ 205,000
SCAT	$ 40,000
TESF	$ 29,000

In addition to the above cooperative agreements, the Service also provided funding to the following: Mexican Wolf SSP for captive management related activities; University of New Mexico for curatorial services for Mexican wolf specimens; and several miscellaneous contracts for veterinary and other services.

5. Research

a. Mexican Wolf Captive Breeding Program

The Mexican Wolf SSP program conducts a variety of research projects on behalf of the conservation of captive Mexican wolves as well as the reintroduction program.

Dr. Cheryl Asa and the Research Department at the Saint Louis Zoo continued reproductive research on Mexican wolves in 2009. In 1991, the Mexican Wolf Recovery Team selected the Saint Louis Zoo to establish and maintain a semen bank to preserve germplasm of genetically important males. Since that time the lab has been collecting, evaluating and freezing semen samples from individual wolves as directed by the Service and the SSP. As part of their ongoing reproductive research efforts, several projects were studied during 2009. These included anesthesia effects on semen collection and sperm quality, oocyte vitrification (flash freezing), ovulation induction with Ovuplant (improves predictability in ovulation), endoscopy to aid artificial insemination, and Deslorelin (Suprelorin) for use as a contraceptive.

Artificial Insemination.
Photo Courtesy of the Wild Canid Survival and Research Center

In 2008 Dr. Dan Moriarty, University of San Diego, and Lowell Nicolaus, Northern Illinois University, began work analyzing Thiabendezole as an aversive agent for use in Mexican wolves. This research focused on the potential to mitigate wolf conflicts with domestic livestock via conditioned taste aversion. The captive application of the study was completed at the California Wolf Center, near Julian, CA in October, 2008. The study was performed on generic gray wolves and has the support of the Humane Society of the United States. Preliminary results demonstrate the safety and efficacy of Thiabendazole-based aversions in a captive setting. The Service anticipates a final write up on the study to be completed in 2010.

Dr. Krista Wenning, USDA Wildlife Services continued research efforts to determine the efficacy of various rabies vaccines used in gray wolves by correlating rabies antibody titer levels with the known vaccination history for each animal. Currently, there is no rabies vaccine labeled for gray wolves. During 2009 facilities participating in the Mexican Wolf SSP continued to collect data (wolf ID, age, sex, vaccination history, route of administration, etc.) and serum for use in this study.

Itzel Yanez , Universidad Autónoma Metropolitana, continued researching an explaination for the higher than expected incidence of nasal squamous cell carcinoma in Mexican wolves. Current research is looking at chromosomal alterations that might indicate a genetic relationship that could link the susceptibility of Mexican wolves to this specific neoplasia.

b. Carnivore-Cattle Studies

From 2003 through 2007, Stewart Breck, National Wildlife Research Center, and colleagues monitored radiotagged domestic cattle calves at two sites in or near the Mexican wolf recovery area. The two study areas differed greatly in terms of habitat and grazing practices. The purpose of this research is to better understand the impact of predators on livestock and the ability of producers to find and correctly identify mortality events in order to develop strategies to prevent depredation and mitigate conflict. Publication is anticipated in 2010.

c. Noninvasive Monitoring Studies

C.A. Cariappa and Warren Ballard, Texas Tech University, and Stewart Breck, National Wildlife Research Center, are attempting species and individual identification using DNA extracted from wolf scat as a potential noninvasive technique to estimate population size. The lab tested the ability to identify individual Mexican wolves using scat collected from eight wolves at the SWMF and was successful in obtaining individual genotypes for all eight wolves. In September 2007 scat was collected within an area of the BRWRA known to share occupancy of four wolf packs. The area was surveyed again in late 2007, February 2008, and April 2008. Publication is anticipated in 2010.

Sarah Rinkevich, Graduate Student at the University of Arizona's School of Natural Resources and the Environment, continued her work using non-invasive genetic sampling to obtain a population size estimate of Mexican wolves on the Fort Apache Indian Reservation (FAIR). Tribal members were hired as field technicians, and scat samples from large carnivores have been collected utilizing scat detection dogs. A total of 378 scat samples were collected from June 25 through August 9, 2008, and 180 samples from May 1 through June 15, 2009, within the eastern portion of the FAIR. Lab work is on-going but preliminary results indicate an extremely low number of wolf samples and a high number of non-target scats (i.e., coyote). The sampling technique using detection dogs is currently being evaluated.

6. Litigation

a. Wild Earth Guardians and Rewilding Institute Lawsuit

On December 12, 2007, Forest Guardians and Sinapu (later merged and renamed "WildEarth Guardians") issued a 60-day Notice of Intent to sue the Service for failure to actively further the conservation of Mexican gray wolf. On April 30, 2008, WildEarth Guardians and the Rewilding Institute filed a lawsuit in the U.S. District Court for the District of Arizona alleging that the Service and the USDA-Forest Service had failed to meet the requirement of Section 10(j) of the Endangered Species Act that any release of an experimental population of an endangered or threatened species will further the conservation of such species (*WildEarth Guardians v U.S. Fish and Wildlife Service*, 2:08-CV-820, D. AZ, 2008). See below (*b. Defenders of Wildlife Lawsuit*) for further discussion.

b. Defenders of Wildlife Lawsuit

On May 1, 2008, Defenders of Wildlife and ten other conservation non-governmental organizations filed a lawsuit in the U.S. District Court for the District of Arizona alleging that the Service violated the National Environmental Policy Act, Endangered Species Act and Administrative Procedures Act in creating AMOC and authorizing Standard Operating Procedure 13, which requires permanent removal of wolves that have engaged in three livestock depredation incidents during a one-year period (*Defenders of Wildlife v Hall*, 4:08-CV-289, D.AZ. 2008).

On July 21, 2008, the court consolidated the WildEarth Guardians and Defenders of Wildlife cases due to their similarity. From July 28 through October 20, 2008, the parties filed briefs in response to the Service's motion to dismiss. On March 31, 2009, the court denied the Service's motion to dismiss, and on December 2, 2009, the Service and the plaintiffs finalized settlement in a Consent Decree in which the Service stated it would make no further decisions that relate to the Mexican Wolf Recovery Program pursuant to the MOU, nor would the Service make decisions that relate to the Mexican Wolf Recovery Program pursuant to Standard Operating Procedure 13.0: Control of Mexican Wolves. In the Consent Decree the Service also recognized that AMOC does not oversee the actions of the Service, and has no decision-making authority over the Service with regard to the Service's management of the Mexican Wolf Recovery Program or the Mexican Wolf Reintroduction Project.

c. Gray Wolf Reclassification Lawsuits

On April 1, 2003, the Service changed the classification of gray wolves under the Endangered Species Act from endangered to threatened, in portions of the lower 48 states and established 3 DPS's for the gray wolf that encompasses the entire historical range of wolves in the United States and Mexico. A Southwestern Gray Wolf DPS was created by this ruling and encompassed all of Arizona and New Mexico, and portions of Utah, Colorado, Oklahoma, Texas, and Mexico. Several environmental groups subsequently filed lawsuits or Notices of Intents to sue regarding the Service's reclassification of gray wolves.

In 2005, the Service lost the lawsuits and the 2003 reclassification was invalidated. The Service reverted to the 1978 gray wolf listing. On December 16, 2005, the Department of Interior issued a statement that we would not appeal the 2005 U.S. District Courts' decisions and further, planned to issue separate, proposed rules to delist new DPS's of gray wolves in the northern Rocky Mountains and the Great Lakes.

On February 27, 2008, a final rule was issued recognizing a Northern Rocky Mountain (NRM) DPS and removing all of the NRM DPS from the List of Endangered and Threatened Wildlife (73 FR 10514, February 27, 2008). On April 28, 2008, a lawsuit was filed challenging the identification and delisting of the NRM DPS, and on July 18, 2008, the U.S. District Court for the District of Montana granted the plaintiffs' motion for preliminary injunction and enjoined our implementation of the final delisting rule for the NRM DPS. The court cited arbitrary actions in delisting a population that lacked evidence of genetic exchange, and arbitrary and capricious actions in approving Wyoming's State wolf management plan. On September 22, 2008, we asked the court to vacate the final rule and remand it to us, which the court did on October 14, 2008.

Similarly, on February 8, 2007, the Service recognized a Western Great Lakes (WGL) DPS and removed it from the List of Endangered and Threatened Wildlife (72 FR 6052, February 8, 2007). This was also challenged in court, with plaintiff's arguing that we may not identify a DPS within a broader pre-existing listed entity for the purpose of delisting the DPS (*Humane Society of the United States* v. *Kempthorne*, Civil action No. 07-0677 (PLF)(D.D.C)). On September 29, 2008, the court vacated the WGL DPS final rule and remanded it to the Service.

On April 2, 2009, a final rule was issued recognizing a new NRM DPS and removing all of the NRM DPS, except for Wyoming, from the List of Endangered and Threatened Wildlife (74 FR 15123, April 2, 2009). This final rule is currently being litigated.

7. <u>Rule Amendment and Environmental Impact Statement</u>

On August 7, 2007, the Service issued a notice of scoping meetings and intent to prepare an EIS and socio-economic assessment for the proposed amendment of the rule establishing a nonessential experimental population of the Arizona and New Mexico population of the gray wolf (72 Federal Register 44065-44069). The Service held scoping meetings in 12 Arizona and New Mexico communities in 2007, and received approximately 13,500 written comments from the public, non-governmental organizations and government agencies at the local, state and federal levels. In response to considerable interest in cooperating agency status among Arizona and New Mexico counties, the Service held a welcome and kick-off meeting for parties that had requested or obtained cooperating agency status on the EIS project in Albuquerque, New Mexico on September 10, 2008. The meeting was attended by thirty-five people representing four military organizations, fifteen Arizona and New Mexico counties, four federal agencies and one Native American tribe. Work has been temporarily suspended on the EIS pending resolution of the nationwide status of the gray wolf and the status of the Mexican wolf.

8. Literature Cited

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Mexican Wolf M806. Mexican Wolf Interagency Trail Camera Photo.

Mexican Wolf Blue Range Reintroduction Project[1]
Interagency Field Team Annual Report
Reporting Period: January 1 – December 31, 2009

Prepared by: Arizona Game and Fish Department (AGFD), New Mexico Department of Game and Fish (NMDGF), U.S. Department of Agriculture - Animal and Plant Health Inspection Service - Wildlife Services (USDA-WS), U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS) and White Mountain Apache Tribe (WMAT).

1. Introduction

This report summarizes results of Interagency Field Team (IFT) activities during 2009. The IFT operates under guidance from an interagency Adaptive Management Oversight Committee (AMOC). The Reintroduction Project is part of a larger recovery program intended to reestablish the Mexican wolf (*Canis lupus baileyi*) across its historical range.

The Reintroduction Project is conducted in accordance with a nonessential experimental population Final Rule (USFWS 1998) that established the 6850 mi^2 (17,740 km^2) Blue Range Wolf Recovery Area (BRWRA) (Fig. 1). In 2000, WMAT agreed to allow free-ranging Mexican wolves to inhabit the Fort Apache Indian Reservation (FAIR). In 2002, WMAT signed an agreement with USFWS that enabled direct release and translocation of Mexican wolves on FAIR. This added approximately 2440 mi^2 (6319 km^2) to the area available for Mexican wolf reintroduction, bringing the total to 9290 mi^2 (24,059 km^2) within the Apache-Sitgreaves National Forests (ASNF; Alpine, Clifton and Springerville Ranger Districts) and FAIR in east-central Arizona and the Gila National Forest (GNF) in west-central New Mexico.

In March 1998, the first release of Mexican wolves occurred on the Alpine and Clifton Ranger Districts of the Apache-Sitgreaves National Forests, Arizona. At the end of 1998, the wild population in Arizona and New Mexico consisted of four wolves in two packs. The population grew to its highest minimum end-of-year count of 59 wolves in 2006, through natural reproduction, translocations and initial releases. At the end of 2009, the wild population totaled a minimum of 42 wolves and nine packs. More information on population statistics can be found at http://www.fws.gov/southwest/es/mexicanwolf/.

Wolf Age and Sex Abbreviations Used in This Document

A = alpha
M = adult male (> two years old)
F = adult female (> two years old)
m = subadult male (one - two years old)

[1] The Reintroduction Project is a state- and tribally-led collaborative effort among six Lead Agencies and five Signatory Cooperators operating under a Memorandum of Understanding (MOU) executed in 2003. Lead Agencies are: Arizona Game and Fish Department (AGFD); New Mexico Department of Game and Fish (NMDGF), USDA-APHIS Wildlife Services (WS), U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), and White Mountain Apache Tribe (WMAT). Signatory Cooperators are: Graham, Greenlee and Navajo counties, Arizona; New Mexico Department of Agriculture; and Otero and Sierra Counties, New Mexico.

f = subadult female (one-two years old)
mp = male pup (< one year old)
fp = female pup (< one year old)

2. Methods

The IFT followed Standard Operating Procedures (SOPs) approved by the Lead Agencies. These SOPs can be found at http://azgfd.gov/wolf. The following definitions apply to the SOPs and to this report:

> *Breeding pair:* an adult male and an adult female that have produced at least two pups during the previous breeding season and which survived until December 31 of the year of their birth (USFWS 1998).
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> *Wolf pack:* two or more wolves that maintain an established territory. In the event one of the two alpha (dominant) wolves dies, the remaining alpha wolf, regardless of pack size, retains the name.
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> *Releases:* wolves released directly from captivity, with no previous free-ranging experience. These "initial releases" may only occur in the Primary Recovery Zone, which is entirely within Greenlee County, Arizona (see Figs. 1 and 2).
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> *Translocations:* free-ranging wolves that are captured and moved to a location away from their site of capture; this includes captured free-ranging wolves that have been temporarily placed in captivity. Unlike initial releases, translocations can occur in the Primary Recovery Zone or in the Secondary Recovery Zone (Fig. 1). The Secondary Recovery Zone contains portions of Apache and Greenlee counties in Arizona, and portions of Catron, Sierra and Grant counties in New Mexico (Fig. 2).
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> *Depredation:* confirmed killing or wounding of lawfully-present domestic livestock by one or more wolves.
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> *Depredation incident:* means the aggregate number of livestock killed or mortally wounded by an individual wolf or by a single pack of wolves at a single location within a one-day (24 hr) period, beginning with the first confirmed kill, as documented in an initial IFT incident investigation pursuant to SOP 11.0.

Releases and Translocations
Initial release candidates are genetically surplus to the captive breeding program. Once selected for release, wolves are acclimated in USFWS-approved facilities prior to release. These facilities include the Ladder Ranch Wolf Management Facility, managed by the Turner Endangered Species Fund, and the Sevilleta Wolf Management Facility, managed by USFWS at Sevilleta National Wildlife Refuge. Both facilities are in New Mexico.

In management facilities, contact between wolves and humans is minimized. Carcasses of road-killed native prey, primarily deer (*Odocoileus* spp.) and elk (*Cervus elaphus*), supplement the

routine diet of commercially-processed canine food. Genetically and socially compatible breeding pairs are established and evaluated for physical, reproductive and behavioral suitability for direct release into the wild. Single wolves are also evaluated for release and potential pairing with wolves in the wild.

Wolves are released using either a soft release or a hard release method. The soft release method holds wolves at the release site for one day to several months to acclimate them to the area. Soft release pens are constructed of chain link. A modified soft release consists of placing wolves in an acclimation pen approximately 0.13 acres (526 m^2) in size and built of nylon mesh, with electric fencing interwoven into the structure. Flagging (fladry) is attached to the pen walls at approximately two-foot intervals, as a visual barrier to discourage wolves from running into the walls. Wolves generally self-release within a few days. A hard release is a direct release of a wolf (or wolves) from a crate into the wild or into an enclosure consisting of fladry hanging on a rope surrounding a small protected area; sometimes the fladry "fence-line" is electrified.

Adult wolves selected for initial release or translocation are radio-collared and given complete physical examinations before they are moved to the initial release or translocation site. Pups are also given complete physicals. Radio-collars are not generally affixed to pups weighing less than 20 pounds. Carcasses of road-killed native prey or commercially-processed canine "meat logs" and fresh water are provided as needed in the initial release/translocation pen. If deemed necessary, the Forest Service may establish and post a "Closure Order" for areas within approximately one mi (1.6 km) of a pen. IFT personnel camp nearby to maintain additional security and monitor the penned wolves.

Following release, wolves are provided road-killed native prey, or meat logs, as supplemental food. The duration of supplemental feeding varies, depending on time of year, availability of vulnerable prey and whether pups are present. Supplemental feeding is gradually discontinued as wolves become self-sufficient, usually within one or two months after release. Monitoring is most intense immediately after release, to determine when wolves begin killing prey and to track movements and behavior.

Radio-telemetry Monitoring

In 2009, all radio-collared wolves were monitored by standard radio-telemetry from the ground and (as opportunity allowed) once weekly from the air. Visual observations, wolf behavior, evidence of a kill site, associated uncollared wolves and fresh sign were also noted when possible. Location data was entered into the Reintroduction Project's database for analysis.

Aerial locations of wolves were used to develop home ranges (White and Garrott 1990), which were calculated based on the definition in the Final Rule (USFWS 1998). Home ranges were calculated using $\geq$20 individual aerial locations on a pack, pair, or single wolf exhibiting territorial behavior over a period of $\geq$six months. To maximize sample independence, individual radio-collared wolf locations were included in home range calculations only if individual wolf locations were spatially or temporally separated from other radio-collared pack members. This limited pseudo-replication of locations. Home range polygons were generated at the 95% confidence level, using the minimum convex polygon (MCP) method (White and Garrott 1990) in the animal movement extension in the program ArcView (Hooge et al. 1999; ESRI, Redlands,

CA, USA). Home ranges were not calculated for wolves that had <20 aerial radio locations, displayed dispersal behavior, or exhibited non-territorial behavior.

Occupied Range
Occupied wolf range was calculated based on the definition in the Final Rule (USFWS 1998) and using the following criteria: (1) a five mi (eight km) radius around all locations of non radio monitored wolves and wolf sign occurring in an area consistently used over a period of at least one month; (2) a five mi (eight km) radius around radio locations of resident wolves when <20 radio locations are available (for radio monitored wolves only); (3) a five mi (eight km) radius around radio monitored wolf locations (for wolves exhibiting dispersal or non-territorial behavior); and (4) a three mi (five km) radius around the minimum convex polygon developed from ≥20 radio locations of a pack, pair, or single wolf exhibiting territorial behavior.

Predation and Depredation Investigations
Throughout the year, Reintroduction Project personnel evaluated ungulate carcasses as they were discovered to determine sex, age, general body condition, and whether the carcass had been scavenged or was a wolf kill. USDA-WS wolf specialists investigated suspected wolf depredations on livestock within 24 hours of receiving a report. When possible, USFWS biologists conducted parallel investigations to determine if any other factors contributed to causing the depredation. Not all dead livestock were found, or found in time to document cause of death. Accordingly, depredation numbers in this report represent the minimum number of livestock killed by wolves.

The 1996 Final Environmental Impact Statement (FEIS) on Mexican wolf reintroduction predicted 1-34 confirmed killed cattle per year with a population of 100 wolves. This represented <0.05 % of all cattle present on the range (USFWS 1996). The Reintroduction Project 5-year Review (AMOC and IFT 2005) reported that between 1998 and 2003 the mean number of cattle confirmed killed per year by wolves was 3.8, which extrapolates to 13.8 cattle killed per year from a population of 100 Mexican wolves. From 2005 to 2009, the number of confirmed cattle killed by wolves exceeded the predicted rate in the FEIS (see below).

Wolf Management
The IFT hazed (purposefully harassed) wolves on foot or by vehicle if the wolves localized near areas of human activity or were found feeding on, chasing or killing livestock. When necessary, the IFT used rubber bullets, cracker shells and fladry to encourage aversive response to humans and to discourage nuisance and depredation behavior. The IFT captured wolves with leg-hold traps (see SOP 14.0). In addition, wolves that established themselves outside the BRWRA were captured and brought back into the BRWRA or temporarily held in captivity, in accordance with the Final Rule (USFWS 1998).

Proactive Management Activities
The IFT employed proactive management to reduce wolf livestock conflicts in the BRWRA. These activities included:

> *Turbo Fladry*: electric fence with red flagging installed around livestock holding pastures and private property to discourage wolf utilization inside the perimeter.

Hay: feed purchased for livestock owners who opted to keep livestock on private property or in small holding pastures during calving season, allowing for greater vigilance over livestock.

Range Riders: contract employees with radio-telemetry equipment to assist stakeholders in monitoring wolf movements in relation to cattle on USFS grazing allotments.

Livestock Grazing Rotation: moving livestock between different pastures within USFS grazing allotments to avoid areas of high wolf use, including den and rendezvous sites.

Exclusionary Fencing: eight-foot high fence enclosing areas of private property to protect especially vulnerable animals or for other specific reasons.

Radio-telemetry Equipment: monitoring equipment loaned to local residents to facilitate their own proactive management activities and to aid in detection and prevention of depredations.

Diversionary Feed: Carcasses of road-killed native prey or commercially-processed canine "meat logs" provided to wolves usually near den and rendezvous sites to reduce depredation potential.

Population Estimation

The IFT continued the expanded efforts initiated in 2006 to make the year-end population estimate more comprehensive. Actions included increased ground surveys and trapping for uncollared wolves, greater coordination of wolf sightings by the public and other agencies and use of remote cameras.

Wolf sign (i.e. tracks, scats) was documented by driving roads and hiking canyons, trails or other areas closed to motor vehicles. Confirmation of uncollared wolves was achieved via visual observation, howling, scats and tracks. Ground survey efforts for suspected, but uncollared, packs were documented using global positioning satellite (GPS) and geographical information system (GIS) software and hardware. GPS locations were recorded and downloaded into GIS software for analysis and mapping. Survey data were also recorded daily on forms and a dedicated survey effort spreadsheet.

In January 2010, aircraft were used to document free-ranging wolves for the end-of-year 2009 minimum population count and to capture wolves as necessary to affix radio-collars. Including January data in the December 31 end-of-year count (and in this report) is appropriate because wolves alive in January were also alive in December (i.e. whelping does not occur in mid-winter). A helicopter was used to more accurately count the number of uncollared wolves associated with collared wolves in all areas and to capture target animals (e.g. uncollared wolves, injured wolves, wolves with old collars or wolves outside the 10j boundary) where the terrain and vegetation cover allowed. Fixed-wing aircraft were used to locate wolves and assess the potential for darting wolves from the helicopter.

As part of the 2009 population estimate, local residents were surveyed for possible wolf sightings. Ranchers, private landowners, wildlife managers, USFS personnel and others were contacted to develop a wolf-sighting database. Sighting reports from agency cooperators were also collected. All sightings were analyzed to determine those that most likely represented unknown wolves or packs.

Remote digital cameras (regular flash and infrared) were used to document wolf presence. Information gleaned from public reports, surveys, and wolf sign was used to guide IFT efforts to trap uncollared single wolves or groups. The objective was to have at least one member of each pack collared. Using these methods, the IFT counted the number of uncollared wolves not associated with collared wolves.

Mortality

Wolf mortalities were identified via telemetry and reports from the public. Mortality signals from radio-collars were investigated by the IFT within 12 hours of detection to determine the status of the wolf. Carcasses were investigated by law enforcement agents and necropsies were conducted to determine proximate cause of death. Causes were summarized for all known deaths. For radio-collared wolves, mortality, missing and removal rates were calculated using methods presented in Heisey and Fuller (1985).

The IFT calculated yearly cause-specific mortality rates (i.e. human-caused vs. natural/unknown mortality). Permanent management removals are equivalent to mortalities in the free-ranging population (see Paquet et al. 2001). Thus, the IFT also calculated yearly cause-specific removal rates for radio-collared wolves. Per the Final Rule (USFWS 1998), wolves are removed from the population for four primary causes: (1) dispersal outside the BRWRA, (2) cattle depredations, (3) nuisance to humans, and (4) other (principally to pair with other wolves or to move a wolf to a better area without any of the other causes occurring first). Each time a wolf was moved, it was considered a removal, regardless of the animal's status later in the year (e.g. if the wolf was translocated or held in captivity). The IFT calculated an overall failure rate of wolves in the wild by combining mortality, missing (includes only those wolves that went missing and are likely dead), and removal rates to represent the overall yearly rate of wolves affected (i.e. dead, missing, or managed) in a given year.

Outreach

The IFT conducted outreach activities under guidance of the Reintroduction Project Outreach Plan developed during 2007. The plan provides an outline of activities that AMOC and the IFT use to inform various target audiences about the Reintroduction Project to stimulate productive dialogue between stakeholders and cooperating agencies. IFT outreach efforts again affirmed the Reintroduction Project's commitment to engage in effective communication, use diverse outreach mechanisms and standardize certain outreach activities. These goals help ensure timely, accurate and effective two-way communication between, and among, cooperating agencies and the public. Reintroduction Project personnel conducted outreach activities on a regular basis, as a means of disseminating information to stakeholders, concerned citizens and government and non-government organizations. This was facilitated through monthly updates, field contacts, handouts, informational display booths, Web page updates and phone contacts. The IFT gave

formal presentations at AMOC Adaptive Management Work Group meetings and conducted two public meetings to gather comment on proposed initial release and translocation actions.

During 2009, the IFT posted Reintroduction Project updates in the BRWRA once each month (at places such as USFS offices, US post offices and libraries) and on the AGFD and USFWS websites (http://azgfd.gov/wolf and http://www.fws.gov/southwest/es/mexicanwolf). Interested parties were encouraged to sign up to receive the update electronically by visiting the AGFD website at http://azgfd.gov/signup. The IFT faxed monthly Reintroduction Project updates to primary cooperating agencies, stakeholders and interested citizens.

The IFT continued producing a location map to inform cooperators and the public of areas occupied by wolves. The map was updated quarterly in March, September, and December and contained the previous three months of wolf aerial locations. It was posted on the AGFD website at http://azgfd.gov/wolf. A map was not produced in June in order to protect the location of den sites. In addition, a description of wolf locations from weekly flights was posted to the website within 48 hours of each flight, per SOP 26.0. The IFT made weekly contacts with specific grazing permittees to provide general locations of wolves on or adjacent to their grazing allotments or private lands.

Reintroduction Project personnel made contact with campers, hunters and other members of the public within the BRWRA to provide information about the Reintroduction Project. These contacts helped advise the public of the potential for encountering wolves, provided general recommendations for recreating in wolf-occupied areas and explained legal provisions of the non-essential experimental population rule. The IFT also collected information on wolf sightings, tracks and scat from these public contacts.

3. Results

Information on the number of wolves and specific locations from FAIR and the San Carlos Apache Reservation (SCAR) is not included in this report, in accordance with Tribal agreements.

Population Status

The 2009 end-of-year count for the Mexican Wolf Nonessential Experimental Population Zone (MWNEPZ) totaled a minimum of 42 wolves: 27 radio-collared wolves (20 adults, 3 subadults and 4 pups) and 15 uncollared wolves (note: uncollared wolves captured during the January 2010 helicopter operation were included as uncollared animals associated with known packs above). Eleven of the 15 uncollared wolves were associated with 4 radio-collared packs and one thought to be single wolf (M619) (Table 1). The IFT also observed sign that indicated potential for two additional uncollared groups on the FAIR, one uncollared group on the SCAR, one pair in Coleman Creek and a single wolf in Williams Valley (all in Arizona). Sign of a single wolf was also located in the Beaverhead area, New Mexico.

There were three radio-collared single female wolves (F1028, F1053, F1106) in New Mexico. F1028 was a single wolf, which retained the Laredo Pack name after M1008 died in August 2008. Approximately 81% (22 out of 27 wolves) of the radio-collared individuals and 88% (37

out of 42 wolves) of all documented (radio-collared and uncollared) wolves were born in the wild.

Two natural pairings were detected in 2009. In June, F521, originally of the Bluestem Pack, joined the Fox Mountain Pack. In July, F1115, originally of the Middle Fork Pack, paired with M1156 from the Luna Pack. This pair is referred to as the Luna Pack. In 2008, there was one natural pairing between the Paradise alpha male (AM795) and the Lofer alpha female (AF1056).

Reproduction

In 2009, seven packs (Bluestem, Dark Canyon, Hawks Nest, Middle Fork, Paradise, Rim and San Mateo) produced wild-conceived, wild-born litters. The IFT documented a minimum of 31 pups born with a minimum of 7 surviving in the wild until year-end (Table 1). This marked the eighth consecutive year in which wild born wolves bred and raised pups in the wild. All nine packs known at the end of 2009 were formed naturally in the wild and were composed of at least one wild-born wolf.

Releases and Translocations

The IFT conducted five hard-release translocations and one soft-release translocation to increase genetic diversity, the number of breeding pairs and the number of wolves in the wild.

On January 18, the IFT captured M1039 near Lookout Mountain in New Mexico. On January 19, the IFT translocated M1039 near F1028 in the vicinity of Deep Creek (New Mexico) to facilitate pair-bonding. Subsequent telemetry monitoring indicated the two wolves did not interact significantly. By the end of the month, the two wolves were traveling separately on the GNF.

On January 20, the IFT translocated F1054 into the Fox Mountain Pack territory in western New Mexico in an effort to provide a potential mate for AM1038. F1054 moved out of the BRWRA and was subsequently recaptured on January 24, near St. Johns, Arizona. The IFT translocated F1054 into New Mexico a second time on January 25. Later that month, F1054 was located outside the BRWRA, east of St. Johns. On February 11, Reintroduction Project personnel darted and captured F1054 from the ground, north of St. Johns, approximately 30 mi outside the BRWRA. After a general health inspection at the White Mountain Veterinary Clinic in Pinetop, Arizona, the IFT placed this wolf into a chain-link holding pen within the Fox Mountain Pack territory (New Mexico) to allow the pack to locate it. After several days, the IFT determined that, due to the uncertain breeding status of F1054, a different female wolf translocated from captivity should replace it. F1054 was removed from the holding pen and transported to the Sevilleta Wolf Management Facility.

On January 23, the IFT captured F1106 outside the BRWRA on the west side of the Luera Mountains in New Mexico. They translocated this wolf back into the BRWRA to the Gila Flat release site in New Mexico via a hard release on January 24.

On February 17, the IFT translocated F1053 from Sevilleta Wolf Management Facility to the chain-link holding pen in the Fox Mountain Pack territory in New Mexico. On February 25, the IFT released F1053 from the holding pen. The IFT received a report of an injured wolf on February 28; however, the wolf died before the IFT reached the site. F1053 died from a gunshot.

On February 18, the IFT received a report from a licensed trapper in New Mexico regarding a wolf that had been captured in a legally-set trap. The IFT responded on February 19. The trapped wolf, F1106, had no injuries as a result of being trapped so the IFT transported and released it back into the BRWRA at the Gila Flat release site in New Mexico.

Home Ranges and Movements

The IFT calculated home ranges for 10 packs exhibiting territorial behavior. The MCP method produced an average home range size of 177 mi^2 (458 km^2), with home ranges varying from 71 mi^2 to 463 mi^2 (184 km^2 to 1199 km^2) (Fig. 4, Table 3). Home ranges were not calculated for 10 wolves (F521, M619, F836, M990, F1028, M1039, F1054, F1106, F1115, F1154) that dispersed or traveled alone during 2009 (see Appendix A for detailed summaries of these individuals).

Mexican wolves occupied 5325 mi^2 (13,790 km^2) of the Mexican Wolf Nonessential Experimental Zone (MWNEPZ) during 2009 (Fig. 5). Within the BRWRA there were 3458 mi^2 (9189 km^2) of occupied wolf range. On the SCAR there were 235 mi^2 (609 km^2) of occupied wolf range. Outside of the BRWRA 1777 mi^2 (4601 km^2) of occupied range was documented. Occupied wolf range occurred and was documented on the FAIR; however, this information is not displayed on the map and specific area values are not provided as requested by the WMAT.

Mortality

The IFT has documented 74 wolf mortalities in the wild since 1998 (Table 4), 8 of which occurred in 2009 (Table 5). Mortalities in 2009 included: F836 and F1053 from illegal shooting; M990, F1028, mp1174, mp1175, fp1178 and fp1186 have necropsy reports pending. This is a minimum estimate of mortalities, since not all deaths are documented. In addition for 2009, the IFT lost radio telemetry contact with four wolves in New Mexico (F1118, AM1038, M1039, m1161). These wolves are considered missing and were designated “fate unknown.”

The IFT monitored 39 individual radio-collared wolves for a total of 10,294 radio-days during 2009. A total of 13 radio-collared wolves were considered removed (n = 5), dead (n = 4), or missing (n = 4). The overall survival rate was 0.63, or a corresponding failure rate of 0.37. The overall failure rate was composed of the human-caused mortality rate (0.06; n = 2), unknown/awaiting necropsy mortality rate (0.06; n = 2), boundary removal rate (0.11; n = 4), fate unknown radio-collared wolves rate (0.11; n = 4), cattle depredation removal rate (0.00; n = 0), nuisance removal rate (0.00; n = 0), and other removal rate (0.03; n = 1).

Predation

Seven carcasses were investigated opportunistically; six were elk and one was a mule deer. Age determinations of the elk revealed: three adults, one yearling and two calves. The age estimation of the mule deer was unknown. Sex determinations of the elk revealed four females, one male and one sex unknown. The mule deer was sex unknown.

Of the six elk carcasses investigated: five were confirmed or probable wolf kills and one was a confirmed mountain lion kill. Cause of death for the one mule deer carcass was undetermined.

Wolf Depredation

USDA-WS members of the IFT completed 42 depredation investigations with potential Mexican wolf involvement. Of these, 41 involved livestock, including cattle (*n* = 38), sheep (*n* = 2) and a horse (*n* = 1). In addition, the IFT conducted one non-livestock investigation involving dead chickens. Average response time between reporting of an incident and initiation of on-site investigation was <20 hours.

Of the 41 individual livestock fatalities investigated, 44% (*n* = 18) were determined to have confirmed (*n* = 17) or probable (*n* = 1) wolf involvement resulting in livestock injury or death, 37% (*n* = 15) had confirmed or suspected cause of death or injury other than wolf and 19% (*n* = 8) were classified as unknown (Tables 6 and 7). There were no confirmed or probable livestock injuries. Seventy-eight percent (*n* = 14) of the livestock fatality investigations that were determined to have confirmed or probable wolf involvement occurred in New Mexico and 22% (*n* = 4) occurred in Arizona (Table 7). Eight other livestock fatality causes were identified in the non-wolf related investigations, including: unknown (*n* = 8), coyote (*C. latrans*) (*n* = 4), suspected plant poisoning (*n* = 4), natural causes (n = 3), birthing complications (*n* = 1), gunshot (n = 1), pneumonia (*n* = 1) and vehicle (*n* = 1).

Eighty percent (*n* = 33) of the 41 livestock fatality investigations conducted were in response to reports from ranchers and other members of the public; 20% (*n* = 8) were initiated by the IFT. In addition, the IFT found and reported 17% (*n* = 3) of the confirmed or probable wolf-caused livestock mortalities (Table 7).

In total, 3 of the 17 (18%) confirmed depredations involved uncollared wolves. Ten of the 17 (59%) confirmed depredations involved Middle Fork Pack (AM871, AF861), in New Mexico (Table 7).

No wolves were permanently removed in 2009 for repeated depredations.

The confirmed wolf-killed cattle rate for 2009 extrapolates to 40.5 depredations/100 wolves, using the number of confirmed killed cattle (*n* = 17; table 7) compared to the final population count (*n* = 42). This projected number of depredations was higher than the 1-34 confirmed killed cattle per 100 wolves predicted in the FEIS.

In 2009, Defenders of Wildlife (Defenders) paid $19,203 to eight individuals who filed wolf-related depredation claims.

Management Actions

In 2009, 16 different wolves were captured and/or removed a total of 19 times. Fourteen capture events involved wolves that were captured, collared, processed and released on-site for routine monitoring purposes (Table 8). The other five capture events involved wolves that were captured for various reasons; three were released within a day of capture, one was treated by a veterinarian and released after recovering from surgery, and one was taken to Sevilleta Wolf Management Facility for evaluation and future translocation. These events are described below.

One wolf (M1039) was captured on January 18, during the helicopter operation, when it appeared to be moving toward the BRWRA boundary. M1039 was released close to F1028, in hopes they would pair up. However, subsequent telemetry monitoring indicated the two wolves did not interact significantly. M1039 was last located in early February, again heading east toward the BRWRA boundary.

On January 20, F1054 was translocated from captivity into the Fox Mountain Pack territory (New Mexico) to pair with AM1038. The wolves never interacted and F1054 was captured twice outside the BRWRA, near St. Johns (Arizona), on January 24 and February 11. It was placed into a small holding pen in the Fox Mountain territory after the second capture. Concern that F1054 was no longer in breeding status led the IFT to remove it to the Sevilleta Wolf Management Facility on February 17.

AM871 of the Middle Fork Pack was captured in the Gila Wilderness (New Mexico) on January 23, during the annual population count. Its left front foot was missing, likely due to a trap injury. The wolf was taken to the Reintroduction Project veterinarian for evaluation and treatment. After recuperation, the IFT released AM871 near its pack on February 2. AM871 continues to be the breeding male of the Middle Fork Pack.

During the end-of-year-count, F1106 was captured outside the BRWRA on January 23. It was released within the BRWRA the next day. On February 18, a licensed trapper caught F1106 in a legally set trap. A Forest Service Law Enforcement Officer helped remove the wolf from the trap and place it into a cage. After evaluating its condition, the IFT released F1106 at Gila Flat (New Mexico).

On June 7, the IFT trapped f1154 on SCAR. The wolf was transported to the Reintroduction Project veterinarian for evaluation and treatment for injuries associated with a poorly fitted radio-collar. After recuperation the wolf was transferred to the Sevilleta Wolf Management Facility on June 23 where it remained eligible for translocation for the rest of the year.

In August and September, the IFT conducted investigations for ten depredation incidents on the Black Range District, Gila National Forest (New Mexico). All ten depredations were confirmed wolf kills. The IFT assigned the depredations to the Middle Fork Pack (AM871, AF861). The IFT hazed the wolves to move them away from livestock and into the Gila Wilderness. Initially, hazing efforts were cautiously conducted a few times a week so as not to separate the adults from the four pups. As depredations continued, hazing was intensified, including nighttime monitoring, trapping, cracker shells and rubber bullets. However, hazing was ineffective. After most of the livestock were moved to private land, the IFT monitored the wolves at night to ensure the wolves did not approach the private land.

USFWS issued three separate management decisions to leave the Middle Fork Pack intact in the wild, despite the pack's depredations. Presence of dependent pups and genetic importance of all individuals in the pack were cited as reasons to leave the wolves in the wild. Each decision stated that increased hazing and other methods were to be used in attempt to reduce depredations. The third decision, dated September 10, stated the adults would be left in the wild until at least November 1. No further decisions were issued.

No wolves were lethally removed or permanently removed from the wild in 2009. Four were translocated (M1039, F1053, F1054, F1106). M1039 was last located in early February. F1053 died in February as a result of a gunshot. These incidents are under investigation. F1054 was moved to Sevilleta Wolf Management Facility in February. Of the four translocated wolves, only F1106 remained in the wild at the end of 2009.

The IFT conducted investigations, with or without management actions, in response to 10 instances of nuisance wolf behavior in 2009 (Table 9). Most nuisance reports involved wolves near people or residences. The other reports were primarily about uncollared wolves or possibly coyotes or domestic dogs. The IFT issued cracker shells to two private individuals who had multiple reports in the vicinity of residences. Trail cameras, tracking, telemetry and howling were used to gather evidence about reported nuisance problems.

Proactive Management Activities

The IFT, working with nongovernmental organizations (NGOs), used proactive management to help reduce wolf-livestock conflicts in the BRWRA (Table 10). The Reintroduction Project and NGOs spent approximately $113,000 on proactive management activities affecting an estimated 9500 livestock (approximately 20% of the permitted livestock grazing in the BRWRA). The IFT and contractors spent approximately 3500 hours implementing proactive management activities.

The IFT installed and maintained turbo fladry for two stakeholders in Arizona to protect livestock and alpacas on public land and private property. The Reintroduction Project also built two fenced enclosures, one in Arizona and one in New Mexico, to protect vulnerable livestock on private land. No livestock depredation incidences occurred within the fenced areas after installation of turbo fladry or permanent fencing.

The Reintroduction Project and NGOs also purchased hay during the calving season for one stakeholder in Arizona. No livestock depredation incidences occurred during calving season on this ranch.

The Reintroduction Project contracted or arranged for four seasonal range riders to assist four stakeholders (two in Arizona, two in New Mexico) in monitoring wolves in relation to cattle. Range riders monitored approximately 8560 livestock within four wolf pack home ranges. Two packs in New Mexico with radio-collared wolves (Middle Fork, San Mateo) depredated on livestock that were being monitored by range riders.

The Reintroduction Project provided funding to a New Mexico rancher to improve water tanks in a livestock pasture farther away from denning wolves. No livestock depredation incidents occurred within denning and rendezvous areas near this proactive management activity.

The IFT loaned radio-telemetry equipment to local residents in areas where wolf-livestock conflicts were prevalent. Three sets were issued to ranches in Arizona and six sets were issued in New Mexico in 2009. The IFT trained these individuals to use the telemetry equipment to monitor wolves in the vicinity of cattle or residences and instructed them on non-injurious hazing

techniques. The stakeholders were encouraged to contact the IFT for assistance and report any wolf-livestock conflicts requiring intensive hazing efforts.

Non-IFT Wolf Sighting Reports

In 2009, the IFT received 84 wolf sighting reports from the public, including 73 from Arizona and 11 from New Mexico (Appendix B). The IFT determined 10 reports were sightings from known wolves within established territories (Arizona $n = 9$, New Mexico $n = 1$), five were likely uncollared/unknown wolves (Arizona $n = 4$, New Mexico $n = 1$), 49 were non-wolf sightings (coyote, dogs, etc.), 12 were probable wolf sightings (wolves located in area; however, weak sighting descriptions cannot be proven yes/no) (Arizona $n = 10$, New Mexico $n = 2$), and 8 did not have enough information to make a determination. To report a sighting of a Mexican wolf, please call 1-888-495-WOLF (9653). The public is encouraged to report Mexican wolf sightings to help the IFT locate undocumented packs and track movements of wolves.

Uncollared wolf sign

The IFT used uncollared wolf sign and sighting reports to target nine core areas (Fig. 6) in an effort to document and/or radio-collar unknown wolves. The IFT searched a total of 1581 mi (2530 km) of roads and trails. One single wolf and one group of two wolves were documented in Arizona and one single wolf was documented in New Mexico (Fig. 7). Four uncollared wolves in groups of two were documented in Arizona on FAIR and one group of two wolves on SCAR.

Outreach

The IFT and other Reintroduction Project personnel gave 44 presentations and status reports to approximately 1289 people in federal and state agencies, conservation groups, rural communities, schools, wildlife workshops, and various other public and private institutions throughout Arizona, New Mexico and White Mountain Apache Tribal lands. Eighty-seven percent of the presentations were for the BRWRA target audience. These also included IFT presentations at Adaptive Management Work Group (AMWG) meetings. In addition, 5493 weekly contacts were made with cooperating agencies and stakeholders. The monthly Reintroduction Project update was faxed to, or posted at, 40 different individuals/locations across the BRWRA. Endangered Species Updates containing current Reintroduction Project and recovery program information also went out to an average of 9000 people each month. Outreach presentations can be scheduled by contacting the IFT at 1-888-495-WOLF (9653).

At USFS kiosks and various road pull-outs in the BRWRA, the IFT maintained metal signs and laminated posters that provide information on minimizing conflicts with wolves. The IFT also replaced all remaining original metal “Wolf Country” information signs in the BRWRA with an updated version to better provide pertinent information regarding the Reintroduction Project to visitors to the area. The IFT also replaced USFWS reward posters at USFS kiosks and local businesses in the BRWRA as necessary, to provide notice of a $10,000 reward for information leading to the apprehension of individuals responsible for illegal Mexican wolf killings.

4. Summary

The 2009 end-of-year count confirmed a minimum of nine packs (four in Arizona, five in New Mexico) of free-ranging Mexican wolves, including 27 radio-collared (20 adults, 3 subadults and

4 pups) and 15 uncollared wolves (including uncollared singles and groups). Eleven of the 15 uncollared wolves were associated with 4 radio-collared packs and one thought to be a single wolf (M619) (Table 1). Three radio-collared single female wolves (F1028, F1053, F1106) were known in New Mexico but only F1106 was alive at the end of the year. There probably are more undocumented, free-ranging wolves in the population but most of them would likely be single animals, as a wolf pack generally leaves more sign and its existence is easier to document.

The IFT conducted six translocations of four single wolves (five hard, one soft) to increase genetic diversity, the number of breeding pairs and the number of wolves in the wild.

Seven packs produced wild-conceived, wild-born litters. This is the eighth consecutive year wild-born Mexican wolves bred and raised pups in the wild. In addition, 81% of the radio-collared individuals and 88% of all documented (radio-collared and uncollared) wolves were wild-born.

The IFT documented eight mortalities of free-ranging wolves in 2009 (four adults, four pups).

Home ranges were calculated for 10 packs exhibiting territorial behavior. The MCP method produced an average home range size of 177 mi^2 (458 km^2), with home ranges varying from 71 mi^2 to 463 mi^2 (184 km^2 to 1199 km^2).

Native prey taken by wolves consisted primarily of elk. There were also 17 confirmed livestock depredations and one probable livestock depredation. There were no confirmed or probable livestock injuries attributed to wolves.

The IFT captured 16 wolves a total of 17 times for routine monitoring (n = 11), movement outside the BRWRA boundary (n = 5) and incidental catch (n = 1). Two wolves with boundary violations were translocated into areas with single wolves in attempt to facilitate pair bonding.

The IFT analyzed 84 reports of wolf sightings from the public; 58% of these reports were non-wolf sightings (coyote, dogs, deer, etc.), 12% were sightings of known wolves within established territories, 14% were probable wolf sightings, 6% were likely uncollared/unknown wolves and the remainder was categorized as unknown due to insufficient information. In response to these sightings, the IFT searched 1581 mi (2530 km) of roads, trails and canyons looking for unknown wolves in and around the BRWRA. As a result, the IFT was successful in documenting one single wolf and one group of two wolves were documented in Arizona and one single wolf was documented in New Mexico.

Reintroduction Project personnel gave 44 presentations and status reports to more than 1289 people in federal and state agencies, conservation groups, rural and urban communities, guide/outfitter organizations, livestock associations, schools, fairs, and various other public and private institutions. In addition, 5493 weekly contacts were made to cooperating agencies and stakeholders. *Endangered Species Updates* containing current Reintroduction Project and recovery program information went out to an average of 9000 addresses each month.

The IFT acknowledges the assistance of all agency personnel and volunteers who provided data and support services for the operational field portion of the Reintroduction Project during this reporting period. Individuals listed in Appendix C collected data or provided other information for this report.

5. Discussion

The IFT documented the Mexican wolf population at a minimum of 42 in 2009 (Table 1, Fig. 8). The number of breeding pairs remained at two, the same as in 2008 (Table 1, Fig. 4). The number of pups alive at the end of the year (n=7) was lower than the previous year (*n* = 11) (Table 1), yet the number of mortalities decreased from 13 in 2008 to eight in 2009 (Table 4). There were two natural pair formations in the wild: F521, formerly of Bluestem Pack, joined Fox Mountain Pack and a dispersing female (F1115) from Middle Fork Pack paired with the Luna Pack male (M1156) after F1118 disappeared.

Based on meta-analysis of gray wolf literature, Fuller et al. (2003) identified a 0.34 mortality rate as the inflection point of wolf populations. Theoretically, wolf populations below a 0.34 mortality rate would increase naturally, and wolf populations above a 0.34 mortality rate would decrease. The Mexican wolf population had an overall failure rate (mortality plus removal) of 0.37 in 2009, which is too high for natural (unassisted) population growth. This suggests the Reintroduction Project must reduce mortality and management related losses (e.g. removals) and/or release and/or translocate more wolves in 2010 to provide for desired population increase. However, the Reintroduction Project had few management removals in 2009 (*n* = 2). While the reduction in the number of management removals is encouraging, the majority of the population losses in 2009 were due to mortalities. The Reintroduction Project will continue to attempt to reduce the level of mortality, while replacing the animals lost through initial releases and translocations.

The 2009 confirmed killed cattle rate extrapolates to approximately 40.5 depredations/100 wolves using the number of confirmed killed cattle (*n* = 17) compared to the final 2009 population count (*n* = 42). This projected number of depredations was higher than the 1-34 confirmed killed cattle per 100 wolves predicted in the FEIS. It is important to note the standard for extrapolating the annual confirmed killed cattle rate/100 wolves uses the end-of-year wolf population count, which does not include wolves that died during 2009. Thus, the confirmed killed cattle rate per 100 wolves, as a matter of practice, underestimated the denominator which inflates the total rate.

A high number of mortalities may exceed growth from natural recruitment, translocations and initial releases in a given year. Nonetheless, a combination of initial releases, translocations, natural pair formations and reproduction in 2010 could result in an increase in the Mexican wolf population. The Reintroduction Project management objective for 2010 is a 10% increase in the minimum wolf population counts and/or the addition of at least one breeding pair, while minimizing negative impacts of wolves. Critical suggested changes to the Reintroduction Project are outlined in the 5-Year Review.

6. Literature Cited

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Table 1. Status of Mexican wolf packs in Arizona and New Mexico, as of December 31, 2009.

Pack	Wolf ID	Reproduction[a]	Pups at Year End[b]	No. Collared	No. Uncollared	Min Pack Size[c]
Bacho, FAIR	AM990[e]	N/A[d]	N/A[d]	N/A[d]	N/A[d]	N/A[d]
Bluestem, AZ	AM806, AF521[k], AF1042, mp1183	4	1	3	0	3
Dark Canyon, NM	AM992, AF923	2	0	2	0	2
Fox Mountain, NM	AM1038[g], F521[k], m1157, m1158, m1161[g]	0	0	3	1	4
Hawks Nest, AZ*	AM1044, AF1110, m1155, fp1188, fp1184[h], m1189[i]	7	2	4	2	6
Laredo, NM[f]	AF1028[e]	0	0	0	0	0
Luna, NM	M1156, F1115, F1118[g]	0	0	2	0	2
Middle Fork, NM	AM871, AF861, mp1185	4	1	3	0	3
Moonshine, AZ[f]	AM1039[g], AF836[e]	0	0	2	0	0
Paradise, AZ*	AM795, AF1056	6	2	2	2	4
Rim, AZ	AM1107, AF858, fp1186[e], fp1187	2	1	3	0	3
San Mateo, NM	AM1114, AF903, mp1174[e], mp1175[e], mp1176[j], mp1177[j], mp1178[e], mp1179[g]	6	0	2	6	2
Radio-collared wolf, NM	F1106	0	0	1	0	1
Radio-collared wolf, NM	F1053	0	0	0	0	0
Radio-collared wolf, AZ/NM	M619	0	0	1	1	2
Williams Valley, AZ	Uncollared wolf	0	0	0	1	1
Coleman Creek, AZ	Uncollared wolf	0	0	0	2	2
Beaverhead, NM	Uncollared wolf	0	0	0	1	1
FAIR	Uncollared wolves	N/A[d]	N/A[d]	N/A[d]	N/A[d]	N/A[d]
SCAR	Uncollared wolves	N/A[d]	N/A[d]	N/A[d]	N/A[d]	N/A[d]
Totals[l]		31	7	28	15	42

[a]Reproduction-maximum number of pups documented in 2009.
[b]Pups at year end documented surviving until December 31, 2009.
[c]Min pack size-total number of wolves (collared, uncollared, pups) documented at year end.
[d]Wolf numbers on FAIR and SCAR are proprietary and therefore not displayed.
[e]Died during 2009.
[f]Pack considered defunct due to lost collars, dispersal, removal or death.
[g]Fate unknown during 2009.
[h]Pup slipped collar during 2009
[i]Counted as uncollared in 2009, collared in 2010.
[j]Placed in captivity.
[k]Dispersed to another pack.
[l]Totals include wolves occurring on FAIR and SCAR.
*A pack that meets the definition of a breeding pair per the Final Rule.

Table 2. Mexican wolves initially released or translocated from captivity or the wild in Arizona and New Mexico during January 1 – December 31, 2009.

Wolf Pack	Wolf #	Release Site	Release Date	Released or Translocated
Single	M1039	Deep Creek, NM	January 19	Translocated from wild
Single	F1054	Spur Lake Basin, NM	January 20	Translocated from captivity
Single	F1106	Gila Flat, NM	January 24	Translocated from wild
Single	F1054	Spur Lake Basin, NM	January 25	Translocated from wild
Single	F1106	Gila Flat, NM	February 19	Translocated from wild
Single	F1053	Spur Lake Basin, NM	February 25	Translocated from captivity

Table 3. Home range sizes of free-ranging Mexican wolf packs in Arizona and New Mexico, January 1 – December 31, 2009.

Wolf ID	Home Range Size 95% Min. Convex Polygon mi^2 (km^2)	Number of Independent Aerial Locations	Duration of Time Radio Locations were Available during 2009
Bacho	83 (214)	41	8 months
Bluestem	234 (607)	46	12 months
Dark Canyon	71 (184)	46	12 months
Fox Mountain	463 (1199)	51	12 months
Hawks Nest	101 (260)	54	12 months
Luna	259 (672)	47	12 months
Middle Fork	110 (284)	53	12 months
Paradise	261 (677)	43	12 months
Rim	105 (272)	49	12 months
San Mateo	78 (202)	48	12 months
Average[a]	**177 (458)**	**48**	**11.6 months**

[a]Averages were based on packs with enough locations to calculate home ranges.

Table 4. Wild Mexican wolf mortalities documented in Arizona and New Mexico, 1998-2009.

Year	Illegal shooting	Vehicle collision	Natural[a]	Other[b]	Unknown	Awaiting necropsy	Annual Total
1998	4	0	0	1	0	0	5
1999	0	1	2	0	0	0	3
2000	1	2	1	0	0	0	4
2001	4	1	2	1	1	0	9
2002	3	0	0	0	0	0	3
2003	7	4	0	0	1	0	12
2004	1	1	1	0	0	0	3
2005	3	0	0	0	1	0	4
2006	1	1	1	1	2	0	6
2007	1	0	1	0	2	0	4
2008	5	2	2	0	2	2	13
2009	2	0	0	0	0	6	8
Total	**32**	**12**	**10**	**3**	**9**	**8**	**74**

[a]Includes three wolves lost to predation, two to starvation, two to disease (canine parvovirus and chronic bacterial pleuritis), and one each to asphyxiation (snake bite), euthanasia, and toxemia.
[b]Includes 2 capture-related mortalities and 1 legal public shooting.

Table 5. Mexican wolf mortalities documented in Arizona and New Mexico during January 1 - December 31, 2009.

Wolf ID	Pack	Age (years)	Date Found	Cause of Death
F836	Moonshine	5	January 19	Illegal shooting
F1053	Single	< 2	February 28	Illegal shooting
mp1174	San Mateo	~5 weeks	June 2	Awaiting necropsy
mp1175	San Mateo	~5 weeks	June 2	Awaiting necropsy
fp1178	San Mateo	~8 weeks	June 22	Awaiting necropsy
F1028	Laredo	3	October 3	Awaiting necropsy
fp1186	Rim	< 6 months	October 13	Awaiting necropsy
M990	Bacho	5	November 23	Awaiting necropsy

Table 6. Mexican wolf depredations of livestock documented in Arizona and New Mexico during January 1 – December 31, 2009.

	Confirmed	Probable	Total
Fatal	17	1	18
Injury	0	0	0

Table 7. Investigations of confirmed and probable depredation and injuries caused by Mexican wolves to livestock during 2009 in New Mexico and Arizona. Depredation incidents are defined within SOP 13.0 as the aggregate number of livestock confirmed killed or mortally wounded by an individual wolf or a single pack of wolves at a single location within a 1-day (24-hour) period, beginning with the first confirmed kill, as documented in the initial IFT incident investigation pursuant to SOP 11.0. Number of depredation incidents on a given wolf at a given point in time is calculated based on the number of incidents in the preceding 365 days.

	Wolves in Area	Investigation Date	Located By IFT	Species	State	Killed/ Injured	Call	Wolves Responsible	Depredation Incident?	No. of Incidents	Management Action
1	F1106	May 12	No	Cattle	NM	Killed	Confirmed	1106	Yes	1	Monitoring
2	Fox Mountain	October 27	Yes	Cattle	NM	Killed	Confirmed	unknown	Yes	0[a]	Monitoring
3	Middle Fork	August 3	Yes	Cattle	NM	Killed	Confirmed	861, 871	Yes	1	Monitoring
4	Middle Fork	August 7	No	Cattle	NM	Killed	Confirmed	861, 871	Yes	2	Monitoring
5	Middle Fork	August 22	No	Cattle	NM	Killed	Confirmed	861, 871	Yes	3	Monitoring
6	Middle Fork	August 26	Yes	Cattle	NM	Killed	Confirmed	861, 871	Yes	4	Monitoring; Intensive hazing
7	Middle Fork	August 26	No	Cattle	NM	Killed	Confirmed	861, 871	Yes	5	Monitoring; Intensive hazing
8	Middle Fork	August 31	No	Cattle	NM	Killed	Confirmed	861, 871	Yes	6	Monitoring; Intensive hazing
9	Middle Fork	September 5	No	Cattle	NM	Killed	Confirmed	861, 871	Yes	7	Monitoring; Intensive hazing
10	Middle Fork	September 5	No	Cattle	NM	Killed	Confirmed	861, 871	Yes	8	Monitoring; Intensive hazing
11	Middle Fork	September 24	No	Cattle	NM	Killed	Confirmed	861, 871	Yes	9	Monitoring; Intensive hazing
12	Middle Fork	September 24	No	Cattle	NM	Killed	Confirmed	861, 871	Yes	10	Monitoring; Intensive hazing
13	Paradise	July 7	No	Cattle	AZ	Killed	Confirmed	795, 1056	Yes	1	Monitoring
14	San Mateo	May 19	No	Cattle	NM	Killed	Probable	1114, 903	No	3[b], 1[b]	Monitoring; food cache established
15	San Mateo	June 15	No	Cattle	NM	Killed	Confirmed	1114, 903	Yes	4, 2	Monitoring
16	Unknown	February 10	No	Cattle	AZ	Killed	Confirmed	Uncollared	No	0	Searched area for trapping opportunity
17	Unknown	June 12	No	Cattle	AZ	Killed	Confirmed	Uncollared	No	0	Searched area for trapping opportunity
18	Unknown	August 22	No	Cattle	AZ	Killed	Confirmed	Uncollared	No	0	Searched area for trapping opportunity

[a]No depredation incident was assigned. Investigation documents two wolves involved, not the entire pack. Evidence not concrete to assign to individual wolves.
[b]No depredation incident was assigned. AM1114 carrying three strikes and AF903 carrying one strike from 2008.

Table 8. Mexican wolves captured in Arizona and New Mexico from January 1, 2009 – December 31, 2009.

Pack	Wolf ID	Capture Date	Reason for Capture
Fox Mountain	mp1161	January 17	Helicopter capture, collared and released.
Fox Mountain	AM1038	January 17	Helicopter capture, collar replaced and released.
Single	M1039	January 18	Movement towards BRWRA boundary. Helicopter capture and released inside boundary near F1028 on Jan. 19.
Middle Fork	AM871	January 23	Helicopter capture, transported to project veterinarian for leg injury, released near pack on Feb 2.
Single	f1106	January 23	Helicopter capture, outside of BRWRA, released within BRWRA on Jan 24.
Single	f1054	January 24	Captured outside of BRWRA near St. Johns, released in Fox Mountain Territory on Jan 25.
Single	f1054	February 11	Captured outside of BRWRA near St. Johns. Placed into temporary pen near Fox Mountain, returned to captivity Feb. 17 due to uncertainty over breeding status.
Single	f1106	February 18	Caught by private trapper. Released by IFT on Feb. 19
Single	f1154	June 7	Captured on SCAR. Transported to Sevilleta Wolf Facility for injury and boundary violations.
Bluestem	AM806	September 4	Routine monitoring purposes. Captured, collar replaced and released on site.
Bluestem	mp1183	September 5	Routine monitoring purposes. Captured, collared and released on site.
Bluestem	AF1042	September 7	Routine monitoring purposes. Captured, collar replaced, and released on site.
Middle Fork	AF861	September 9	Captured for management/hazing activities. Collar replaced and released on site.
Hawks Nest	fp1184	September 13	Routine monitoring purposes. Captured, collared and released on site.
Middle Fork	mp1185	September 13	Routine monitoring purposes. Captured, collared and released on site.
Middle Fork	AF861	September 16	Captured for management/hazing activities. Released on site.
Rim	fp1186	September 25	Routine monitoring purposes. Captured, collared and released on site.
Hawks Nest	fp1188	October 8	Routine monitoring purposes. Captured, collared and released on site.
Rim	fp1187	October 10	Routine monitoring purposes. Captured, collared and released on site.

Table 9. IFT management actions resulting from Mexican wolf nuisance activities in Arizona and New Mexico during 2009.

Date	Wolf ID	General Location	Type of Activity	IFT Response	Management Result
Feb 11	F1054	North of St. Johns, AZ	Located 30 mi outside the BRWRA.	IFT darted and captured F1054 from the ground. It was placed in a holding pen within Fox Mountain Pack Territory.	Due to the uncertain breeding status of F1054, it was taken back to Sevilleta. F1053 was put in the pen.
Mar 18	Fox Mountain	Near Nutrioso, AZ	Wolves were near residence and Alpacas	IFT used cracker shells to haze wolves, placed fladry around 2 acre Alpaca enclosure.	No additional incidence of wolves in area.
Mar 18	Paradise + uncollared	E. of Antelope Mtn.	Landowner reported 4-5 wolves chasing a calf on private land.	Monitored area for uncollared and collared wolves in area.	No wolves documented on the property.
Mar 20	Paradise + uncollared	E. of Antelope Mtn.	4 large canids reported in the vicinity of a non-wolf depredated cow carcass on private property.	Monitored area for uncollared and collared wolves in area.	No wolves documented on the property.
Apr 4-11	Fox Mountain	East of Escudilla Mtn.	Wolves on private property, wary of resident but not overly fearful.	IFT investigated the report.	No actions taken, wolves had left area.
Jul 23	F1028	South of Negrito Work Center, NM.	Wolf was observed in and near a barn on private property. Resident confronted wolf. Wolf left the area.	IFT investigated the report and determined wolf was F1028.	No actions taken, since the wolf left the area.
Early Aug	F1028	South of Negrito Work Center, NM.	Wolf returned to private property and was chased off by resident.	IFT investigated and determined was F1028.	Staff continued to monitor weekly and haze when required.
Aug 29	M1155	Near Crosby Crossing	Wolf was present at a camp for a few minutes one morning. Dogs were in trailer and no food available.	IFT investigated the report.	No actions taken, wolf left area.
Sep 13-19	Uncollared	Near Greer	Wolf seen very close to residence.	Investigated and issued cracker shells, set traps in area.	No wolves documented in the area.
Dec 27 – Jan 7	Uncollared	Near Overgaard	Wolves reported near residence.	IFT investigated	Determined animals were coyotes.

Table 10. IFT proactive management activities in Arizona and New Mexico during 2009.

Proactive Management Activity	Purpose	Date	Location	Wolf ID	Management Result
Fladry – 3 mi	Reduce the probability of livestock depredation within a small area.	May to October	Sheep Springs, AZ	Paradise	No livestock depredation occurred.
Fladry – variable	Reduce the probability of livestock depredation on sheep during nighttime hours.	May to September	Sheep Springs, AZ	Paradise	No livestock depredation occurred.
Fladry – 0.25 mi	Reduce the probability of livestock depredation within a small area.	December - March	Antelope Mountain, AZ	F836	No livestock depredation occurred.
Fladry – 0.25 mi	Reduce the probability of depredation on alpacas	March – April	Nutrioso, AZ	Fox Mountain	No depredations occurred.
Hay	Reduce the probability of livestock depredation during vulnerable calving season.	January to March	Blue River, AZ	Uncollared Wolves	No livestock depredation occurred.
Range Rider	Reduce the probability of predator depredation on free-ranging livestock.	July to September	Crosby Crossing, AZ	Hawks Nest	No livestock depredation occurred within the fenced area.
Range Rider	Reduce the probability of predator depredation on free-ranging livestock.	February to September	Sand Flat, NM	San Mateo	One livestock depredation incident occurred.
Range Rider	Reduce the probability of predator depredation on free-ranging livestock.	July to October	Greens Peak, AZ	Paradise, Uncollared Wolves	No depredation incidences occurred.
Range Rider	Reduce the probability of predator depredation on free-ranging livestock.	April to November	Black Mountain, NM	Middle Fork	Ten livestock depredation incidences occurred.
Exclusionary Fencing	Reduce the probability of livestock depredation and nuisance within fenced areas of private property.	Year round	Gila Hot Springs, NM	Laredo, F1106	No livestock depredation occurred within the fenced area.
Exclusionary Fencing	Reduce the probability of livestock depredation and nuisance within fenced areas of private property.	Year round	Antelope Mountain, AZ	M619, F836, uncollared wolves	No livestock depredation occurred within the fenced area.
Water Tanks	Allow use of vacant pasture to reduce probability of wolf depredation.	August - December	Corner Mountain, NM	Dark Canyon	No livestock depredation occurred in pasture.

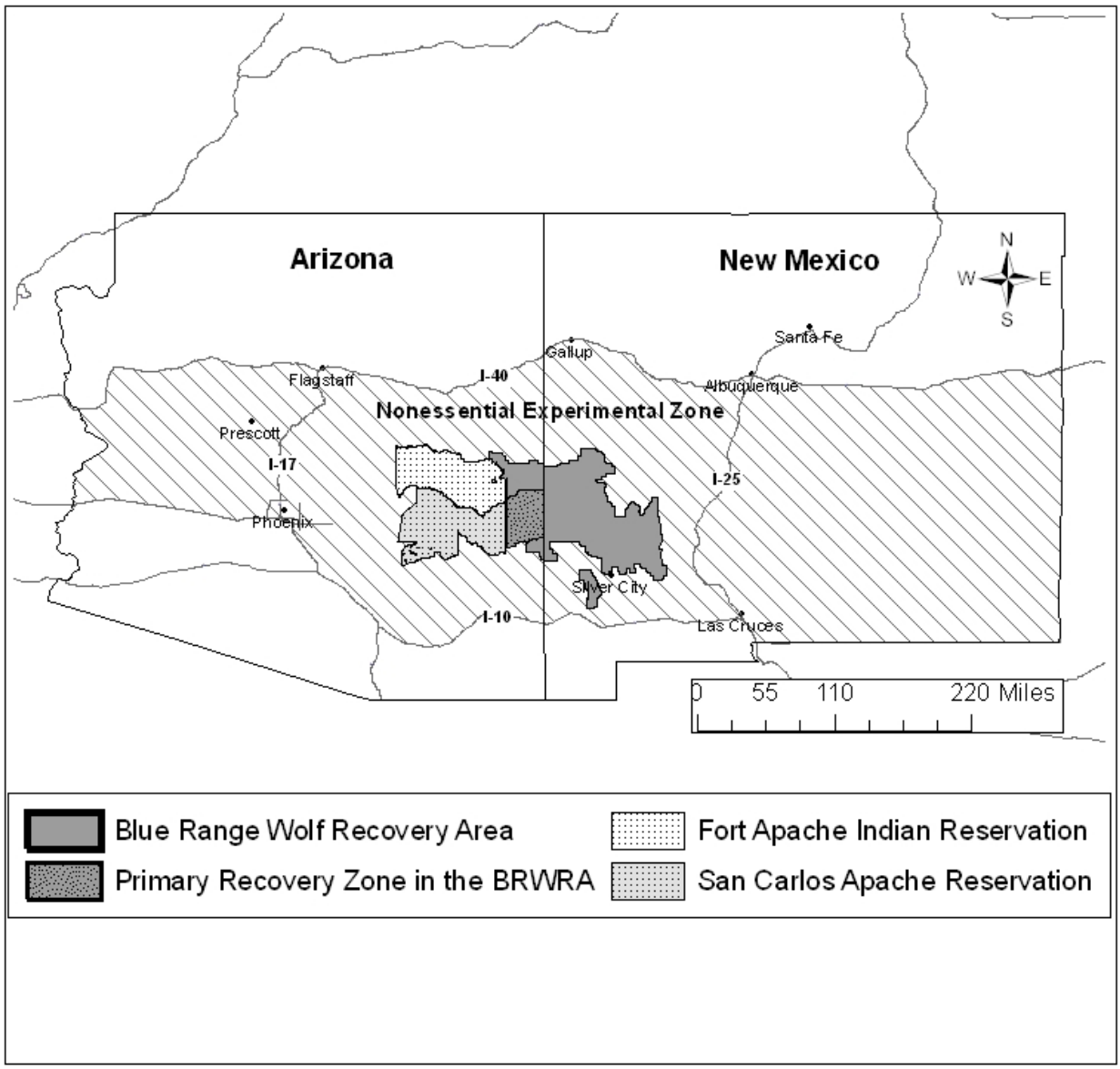

Figure 1. The Blue Range Wolf Recovery Area and Mexican Wolf Nonessential Experimental Zone (cross-hatched area) in Arizona and New Mexico.

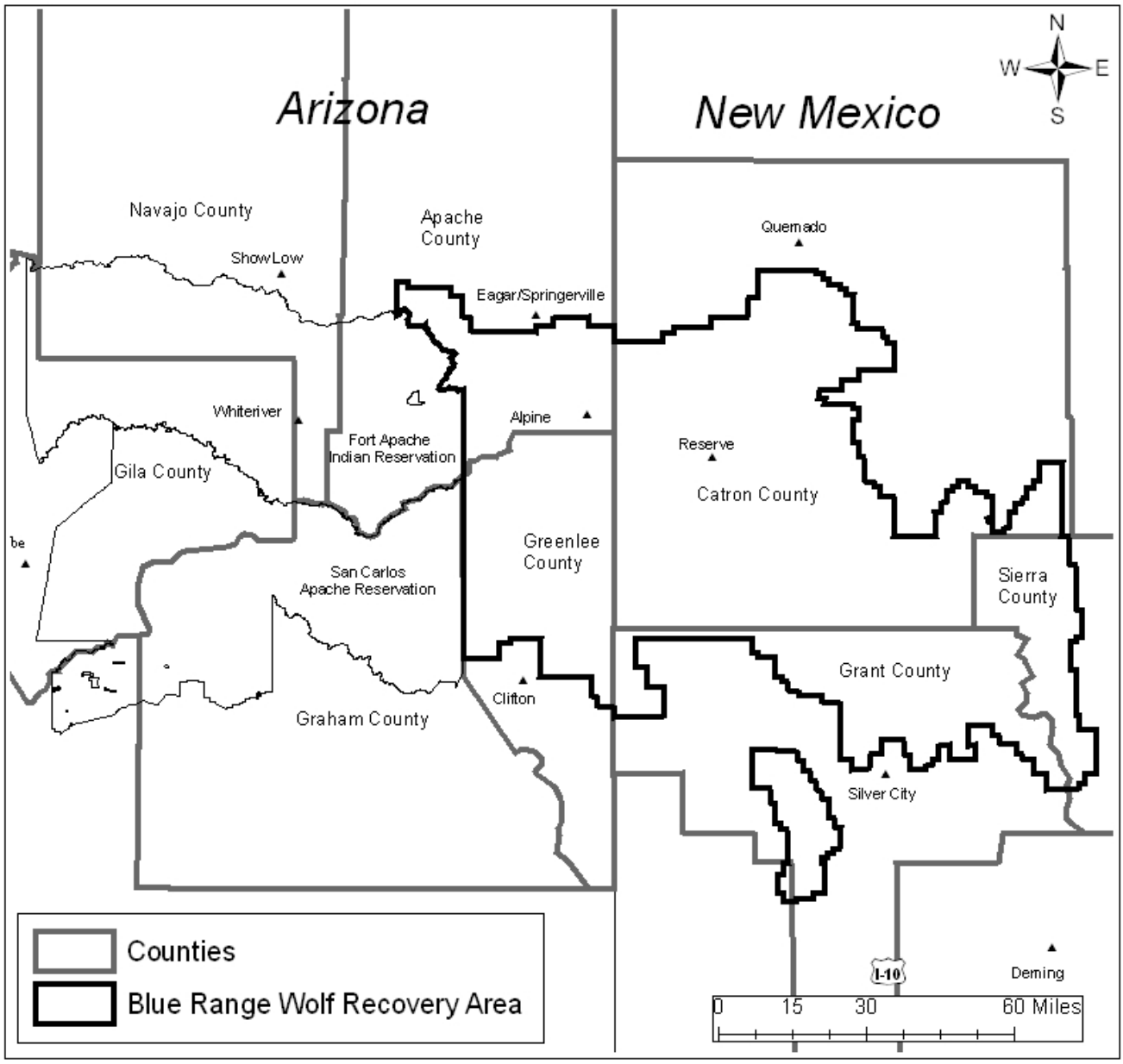

Figure 2. Counties that occur in or adjacent to the Blue Range Wolf Recovery Area in Arizona and New Mexico.

Figure 3. Translocation sites used during 2009 in Arizona and New Mexico within the Blue Range Wolf Recovery Area.

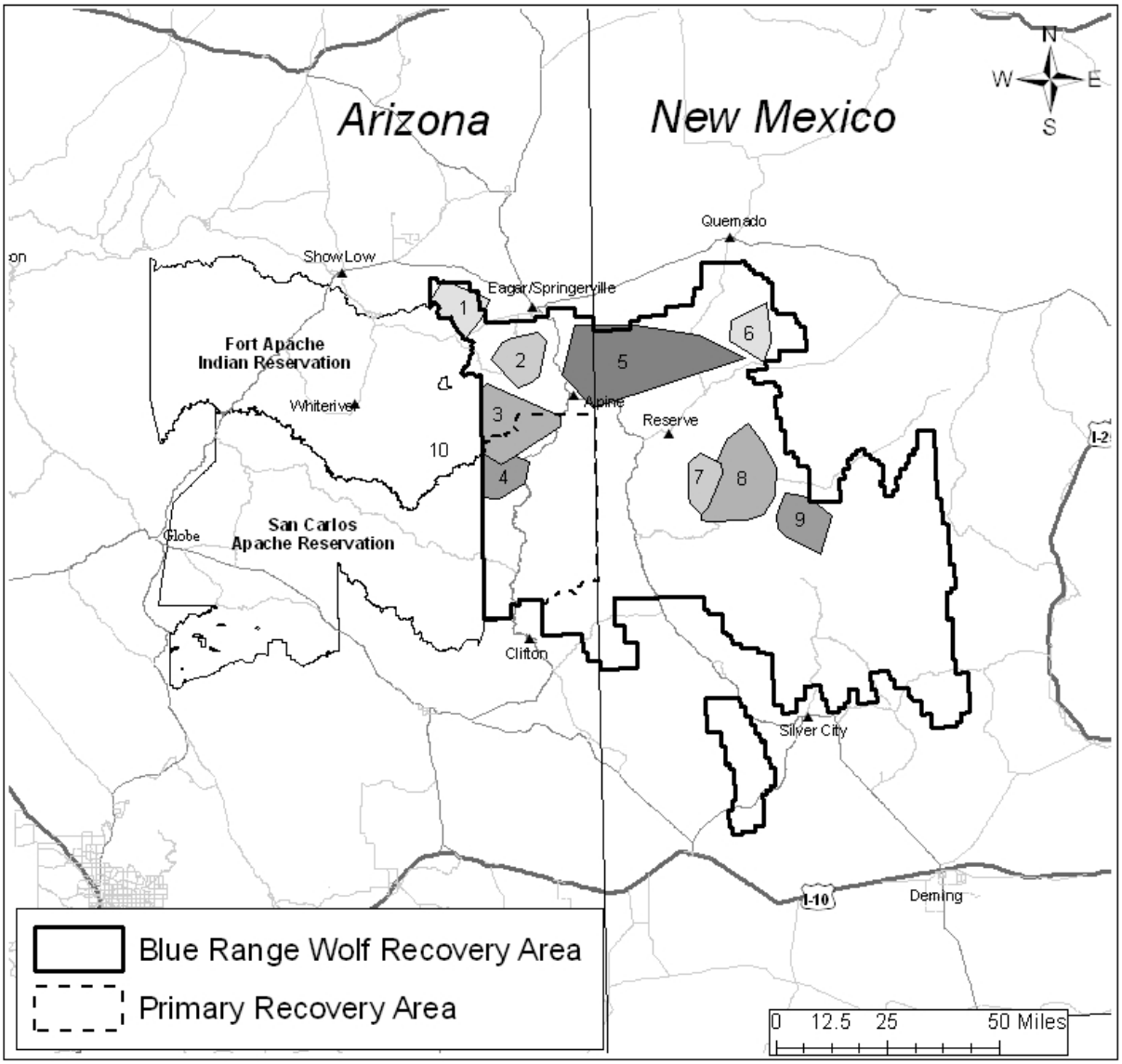

Figure 4. Mexican wolf home ranges for 2009 in Arizona and New Mexico. The shaded polygons and corresponding numbers on the map represent wolves having >20 independent radio locations and exhibiting movement characteristics consistent with a home range during 2009. See the following page for information regarding the wolf packs and home ranges.

Figure 4. Continued.

Map Number	Wolf Pack	Number of Wolves	Wolf Fate at the End of 2009	Breeding Pair Status	Home Range Size (mi^2)
1	Paradise	4	Free-ranging	Yes	261
2	Hawks Nest	6	Free-ranging	Yes	101
3	Bluestem	3	Free-ranging	No	234
4	Rim	3	Free-ranging	No	105
5	Fox Mountain	4	Free-ranging	No	463
6	San Mateo	2	Free-ranging	No	78
7	Dark Canyon	2	Free-ranging	No	71
8	Luna	2	Free-ranging	No	259
9	Middle Fork	3	Free-ranging	No	110
10	Bacho	NA[b]	defunct	No	83

[a]<20 independent aerial locations were available for these packs therefore, no home ranges were calculated.
[b]Wolf information (including numbers) on the Fort Apache Indian Reservation and the San Carlos Apache Reservation is proprietary and is not displayed.

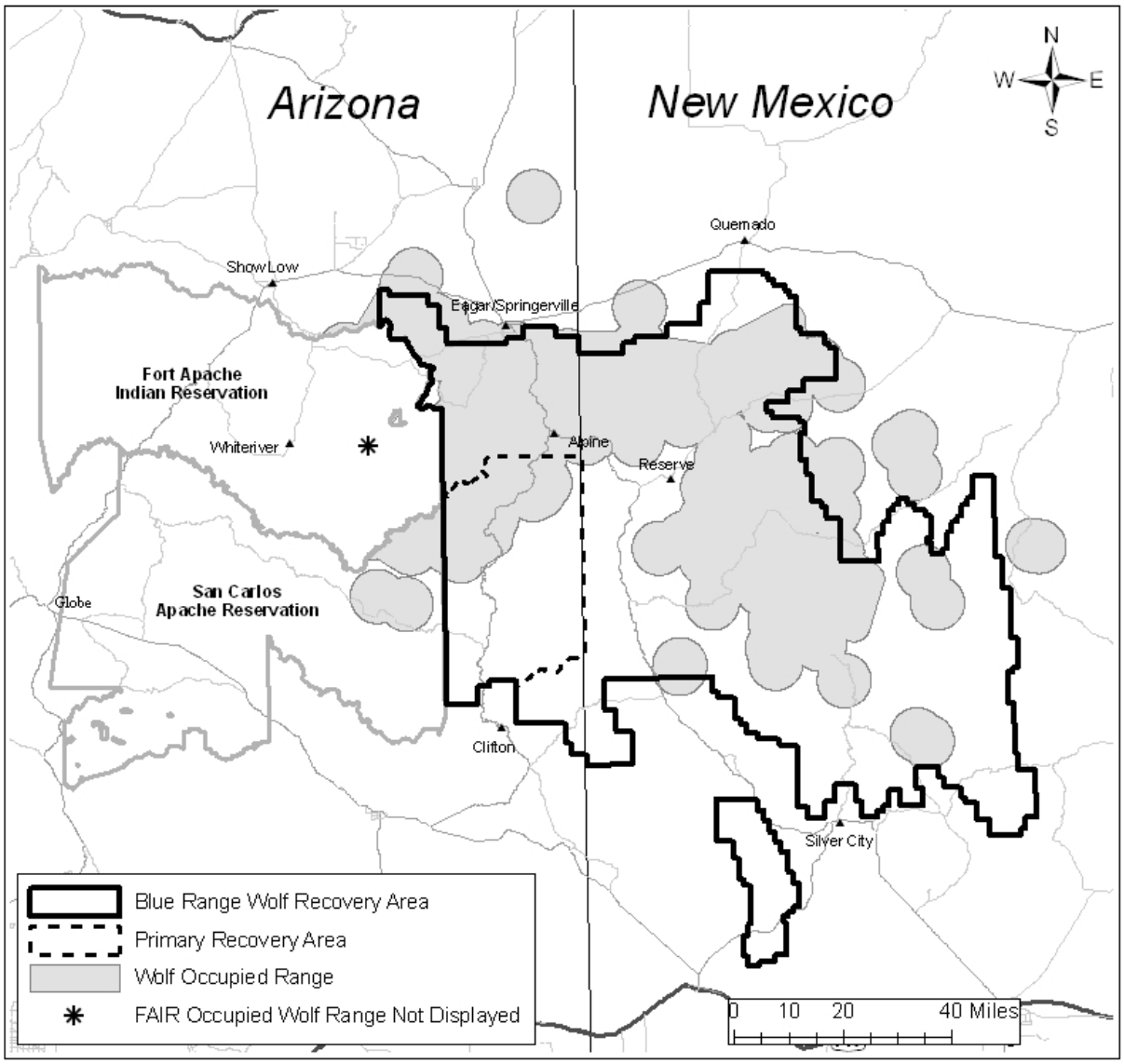

Figure 5. Mexican wolf occupied range in Arizona and New Mexico within the Mexican Wolf Nonessential Experimental Zone as defined in the Final Rule (USFWS 1998). Note: occupied wolf range occurred and was documented on the Fort Apache Indian Reservation; however, this information is not displayed on the map as requested by the White Mountain Apache Tribe.

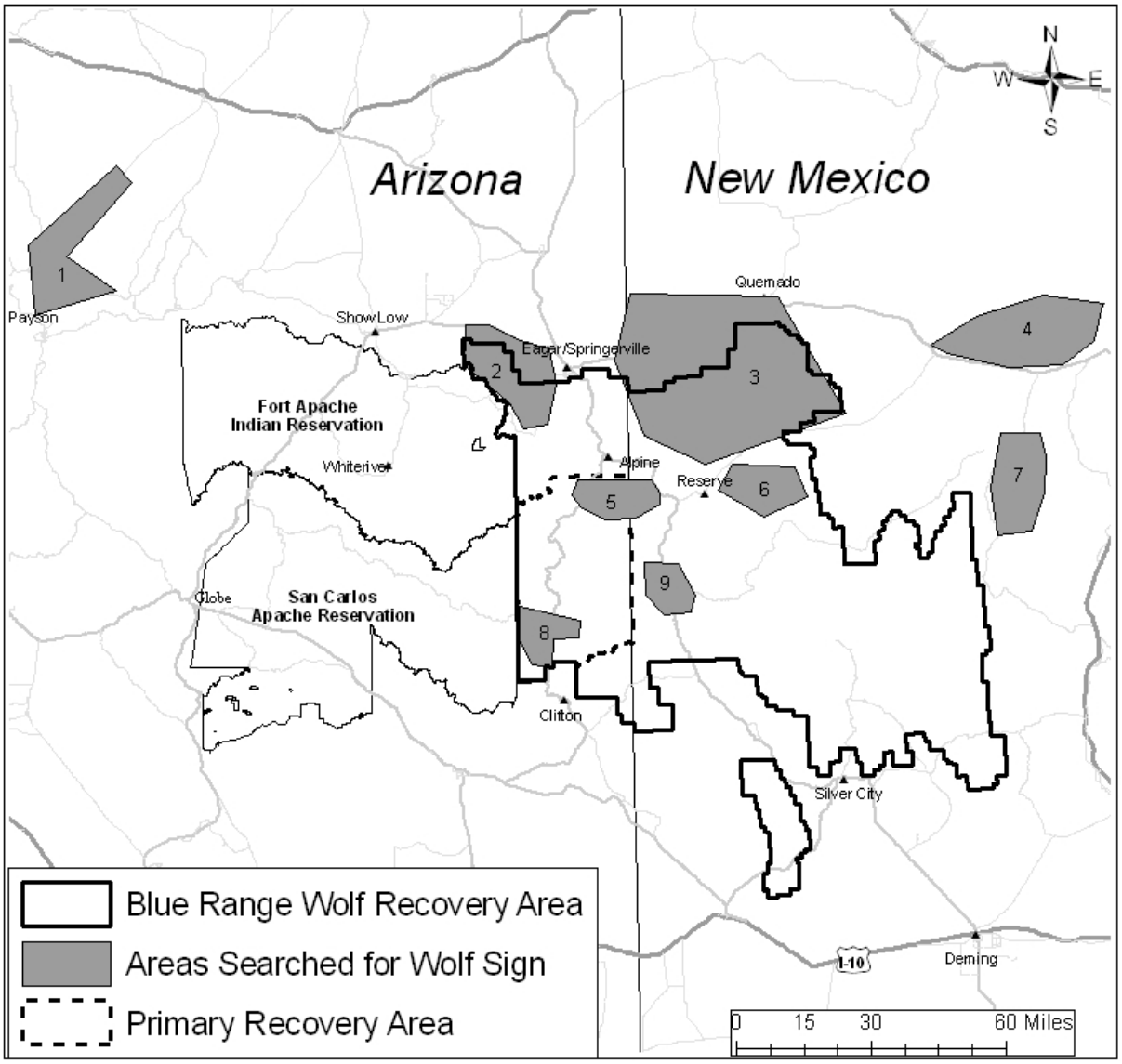

Figure 6. Areas searched and corresponding miles searched (driven or hiked) for uncollared wolf sign in Arizona and New Mexico. Search areas corresponding to “map numbers” as follows:

Figure 6 continued.

Map Numbers	Search Area	Miles Searched in AZ	Miles Searched in NM
1	Blue Ridge	153	0
2	Greens Peak	358	0
3	Northern Gila National Forest	0	224
4	Cibola Mountains	0	40
5	Coleman Creek – Maness Area	87	223
6	Tularosa Mountains	0	110
7	San Mateo Mountains	0	350
8	No Bar Mesa	25	0
9	Glenwood	0	11
	Total	**623**	**958**
	Grand Total for AZ and NM	**1581**	

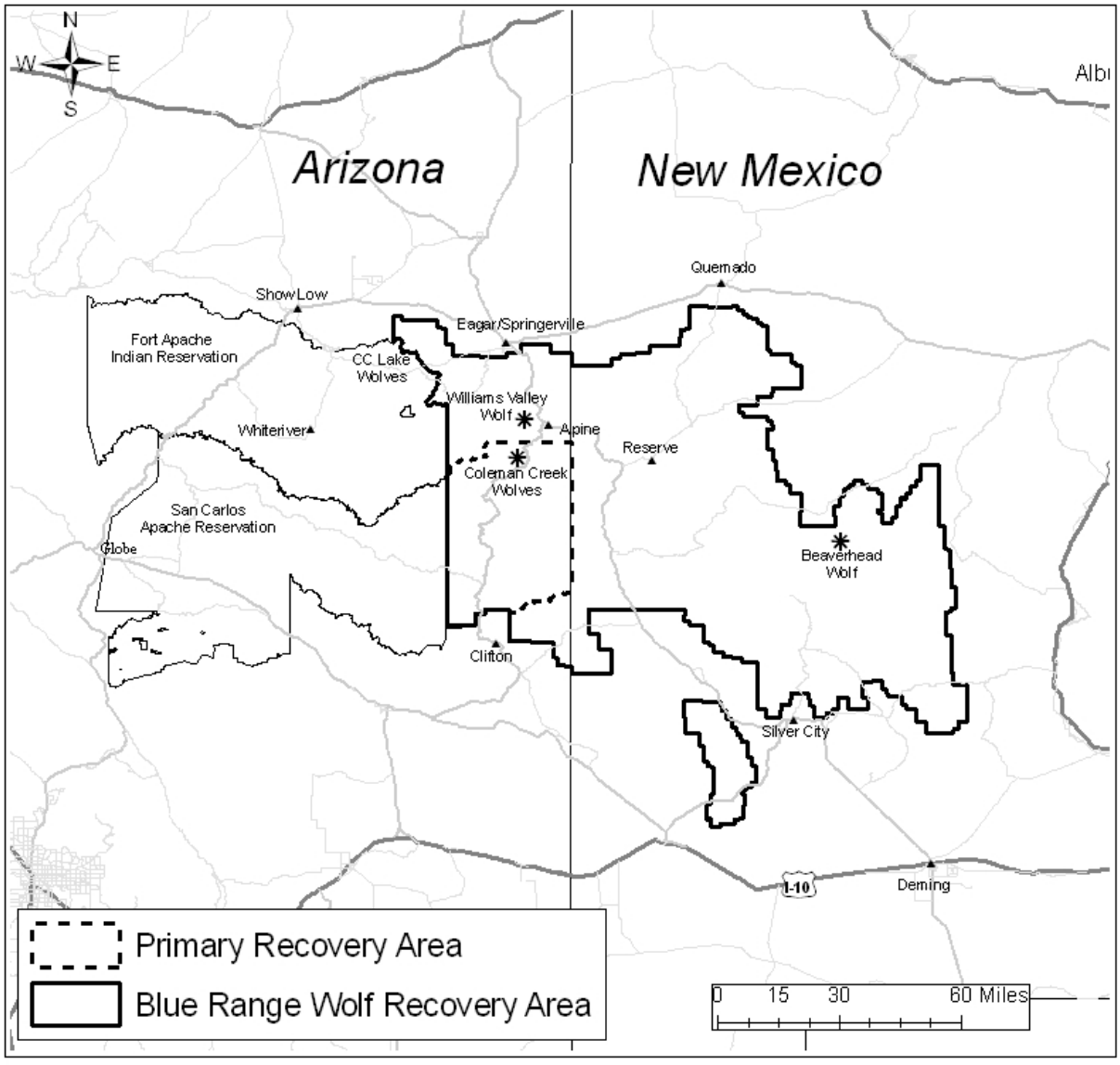

Figure 7. Uncollared wolves documented and counted in the 2009 wolf population in Arizona and New Mexico.

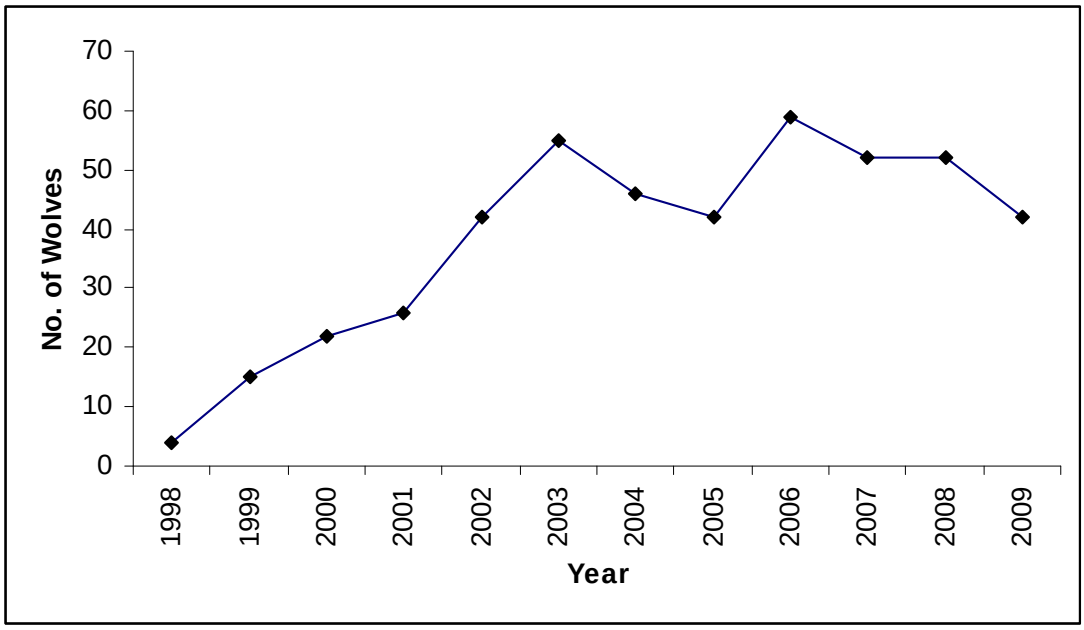

Figure 8. Mexican wolf minimum population estimates from 1998 through 2009 in Arizona and New Mexico.

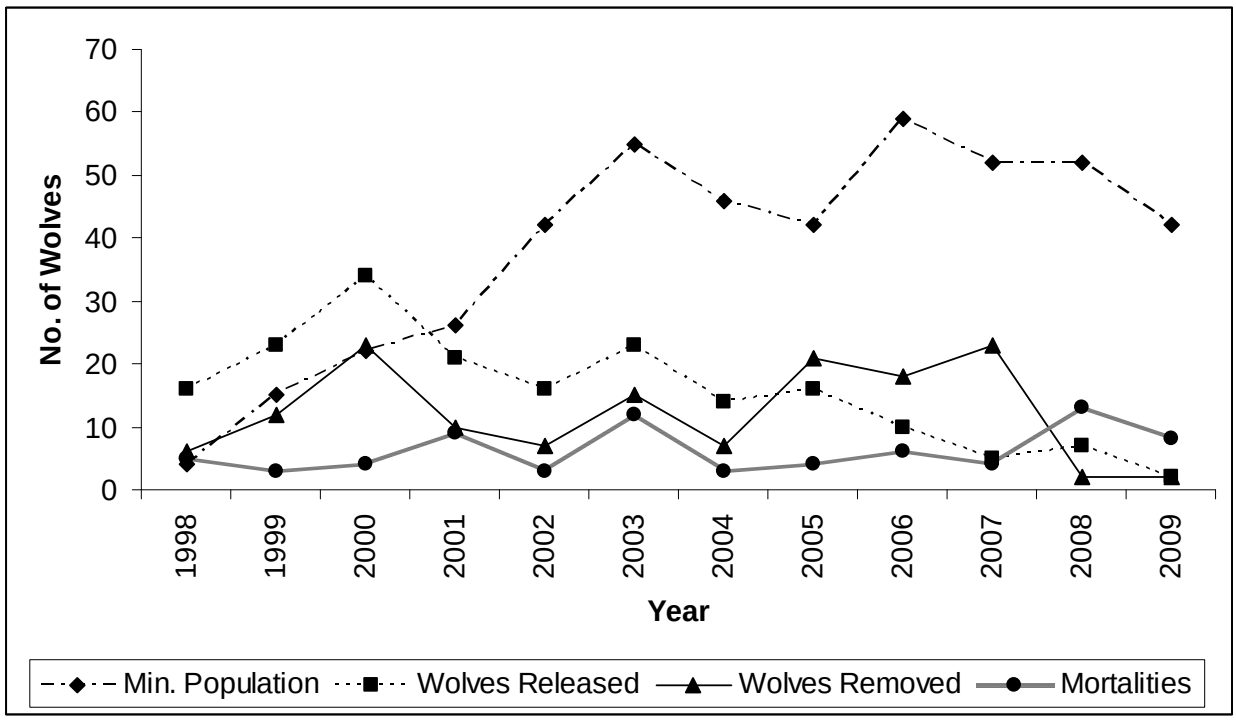

Figure 9. Mexican wolf population estimates and associated population parameters. Wolves released included: translocations (wolves re-released from captivity back into the wild) and initial releases (wolves released with no wild experience). Lethal control of wolves was counted within the wolves removed figures because they are associated with management actions.

7. Pack Summaries

Bacho Pack (AM990 and fp1154)

In January, the Bacho Pack (Arizona) consisted of AM990, fp1154 and 3 uncollared wolves. The pack used its traditional territory on FAIR. Denning behavior was documented for AM990 in May; however, no reproduction was confirmed in 2009. On June 6, fp1154 was trapped and moved to captivity for medical treatment associated with a poorly fitted radio-collar and for persistence outside the BRWRA. On August 26, AM990 showed dispersal behavior and was located outside the FAIR. On October 19, the IFT observed AM990 traveling alone on the ASNF. On November 23, a mortality signal was heard for AM990. An investigation was conducted on November 24 and the carcass of AM990 was recovered from SCAR. Specific wolf information (including numbers or home ranges) on SCAR and FAIR is proprietary and therefore not discussed in detail within this report. The Bacho Pack was not considered a "Breeding Pair" in 2009, per the definition in the Final Rule (USFWS 1998). No confirmed depredations or translocations involving the Bacho Pack occurred in 2009.

Bluestem Pack (AF521, AM806, AF1042, mp1183)

In January, the Bluestem Pack (Arizona) consisted of three wolves with functioning radio-collars (AF521, AM806, F1042). During the February 16 weekly telemetry flight, AF521 was located separate from the Bluestem Pack. Subsequently, The IFT consistently located AF521 away from the pack and designated it as a single wolf on May 26. On July 6, F521 was located with the Fox Mountain Pack (AM1038, m1157, m1158, m1161) and remained with this pack for the remainder of the year. The IFT documented denning behavior from AM806 and AF1042. On July 14, The IFT observed one pup. Four pups were observed on a rendezvous site on September 2. On September 4, AM806 was captured, its collar replaced and released on site. On September 5, a male pup was captured, collared and released on site. The pup was assigned studbook number mp1183. On September 7, AF1042 was captured, its collar replaced and released on site. Throughout the year, the Bluestem Pack used their traditional territory in the central portion of the ASNF and the FAIR. As of January 2010, the Bluestem Pack consisted of three animals (AM806, AF1042, mp1183). Therefore, the Bluestem Pack was not considered a "Breeding Pair," per the definition in the Final Rule (USFWS 1998). No depredations, removals or translocations involving the Bluestem Pack occurred in 2009.

Dark Canyon Pack (AF923, AM992)

The Dark Canyon Pack (New Mexico) consisted of AM992 and AF923. Throughout the year, the Dark Canyon Pack remained in its traditional territory in the west-central portion of the GNF. In April, the IFT documented denning behavior. On September 19, two pups were observed with AM992 in Rainy Mesa Canyon. In January 2010, during the annual population count, no uncollared animals were spotted with AM992 and AF923. Therefore, per the definition in the Final Rule (USFWS 1998), the Dark Canyon Pack was not considered a "Breeding Pair" in 2009. No confirmed depredations, mortalities, removals or translocations involving the Dark Canyon Pack occurred in 2009.

Fox Mountain Pack (F521, AM1038, m1157, m1158, m1161)
In January, the Fox Mountain Pack (New Mexico) consisted of AM1038 and its three offspring (m1157, m1158, uncollared pup). On January 17, a male pup was captured, collared and assigned studbook number mp1161. Reintroduction Project personnel also captured AM1038 on January 17 to assess a leg injury discovered in summer 2008. AM1038 had a broken leg, which healed and did not need veterinary care. After its radio-collar was replaced, AM1038 was returned to its territory. Throughout the year, the pack continued to use its territory in the northwest portion of the GNF. In June, F521, formerly the alpha female of the Bluestem Pack joined the Fox Mountain males. On October 27, the IFT investigated a report of a dead, two year old heifer on private land within the Fox Mountain Pack territory. The IFT confirmed this as a wolf depredation incident, likely involving one or two wolves; however, no depredation incident was assigned to a specific wolf or wolves. The investigation did not reveal evidence to implicate specific individuals from the Fox Mountain Pack. The IFT was last able to locate AM1038 and m1161 on the December 21 telemetry flight. These two wolves are considered fate unknown. Per the definition in the Final Rule (USFWS 1998), the Fox Mountain Pack was not considered a "Breeding Pair" in 2009 because no female wolves were present in the pack until after the breeding season. There were no removals or translocations involving the Fox Mountain Pack in 2009.

Hawks Nest Pack (AF1110, AM1044, m1155, fp1184, fp1188)
In January, the Hawks Nest Pack consisted of AM1044, AF1110, mp1155 and an uncollared animal observed during the annual population count. The IFT documented denning behavior in May. The IFT documented seven pups and one uncollared wolf from May to July. In August, six pups were observed. On September 13, The IFT captured, collared and released on site a female pup. The pup was assigned studbook number fp1184. On September 30, fp1184 slipped its collar. The collar was retrieved and the site investigated for evidence regarding the fate of fp1184; however, there was no evidence indicating fp1184 died. On October 8, the IFT captured, collared and released on site a female pup. The pup was assigned studbook number fp1188. During the 2009 annual population count in January 2010, two pups were observed; therefore, the Hawks Nest Pack was considered a "Breeding Pair" in 2009 per the definition in the Final Rule (USFWS 1998). No confirmed mortalities, depredations, removals or translocations involving the Hawks Nest Pack occurred in 2009.

Laredo Pack (F1028)
In 2009, the Laredo Pack was considered defunct due to the loss of the alpha male (AM1008) in August 2008. The remaining pack member, F1028, traveled extensively in the Gila Wilderness and GNF without establishing a territory or finding another mate. On January 18, Reintroduction Project personnel translocated M1039 close to F1028 near Deep Creek Divide to facilitate pair bonding. However, subsequent telemetry monitoring indicated the wolves did not interact. On July 23, a private landowner reported a nuisance wolf south of Negrito Work Center. The wolf reportedly left the area on its own after being confronted by the landowner. The IFT investigated the report and determined the wolf was F1028. On October 3, The IFT found F1028 dead near the Negrito Airstrip. The death is under investigation. The Laredo Pack was not considered a "Breeding Pair" in 2009 per the definition in the Final Rule (USFWS 1998). There were no

confirmed depredations or removals involving the Laredo Pack in 2009. The Laredo Pack is now defunct.

Luna Pack (F1115, F1118, M1156)
In January, the Luna Pack consisted of F1118 and M1156. In February, radio contact was lost on F1118. F1118 is considered "fate unknown." M1156 continued to use its territory throughout the year in the central portion of the GNF. In July, F1115, formally of the Middle Fork Pack, was documented traveling with M1156. During the entire month of August, the IFT documented F1115 as traveling with M1156. The IFT considered M1156 and F1115 to be paired. Per the definition in the Final Rule (1998), the Luna Pack was not considered a "Breeding Pair" in 2009 because F1115 did not pair with M1156 until after the breeding season. No confirmed depredations, removals or translocations involving the Luna Pack occurred in 2009.

Middle Fork Pack (AF861, AM871, mp1185)
In January, the Middle Fork Pack consisted of AF861, AM871 and an uncollared wolf. On January 23, the IFT captured AM871 to replace the existing radio-collar. AM871 had a trap-related injury to its left front foot. The IFT transferred AM871 to the Reintroduction Project veterinarian for surgery and was subsequently released on February 2 to rejoin the pack. Throughout the year, the pack used its territory in the northern portion of the Gila Wilderness and central portion of the GNF. In May, the IFT documented denning behavior. On June 22, four pups were observed at the den. During August, the IFT assigned six depredation incidents to AF861 and AM871 between August 3 and August 31. All of the incidents occurred in the vicinity of Houghton Canyon. On August 28, USFWS issued a Director's Decision Memo in reference to 3rd, 4th and 5th depredation incidents, which called for intensive hazing, in an attempt to deter future livestock depredations and to potentially move the wolves out of the area. On September 4, USFWS issued a second Director's Decision Memo, in reference to the 6th depredation on August 31, to again leave AF861 and AM871 in the wild with their four pups. Between September 5 and September 24, the IFT assigned four additional depredations incidents in Houghton Canyon to AF861 and AM871. These four confirmed depredation bring AF861 and AM871 to ten confirmed depredation incidents within a 365 day period. On September 9, the IFT trapped AF861 during hazing efforts, replaced the collar and released the wolf on site. On September 10, USFWS issued a Director's Decision Memo reaffirming the September 4 decision, stating AF861 and AM871 will remain in the wild through November 1 without necessity of further decisions. USFWS developed these Decision Memos with regard to overall low population numbers of Mexican wolves in the BRWRA, presence of pups with the adult wolves and the genetic importance of the members of this pack. On September 13, a male pup was captured, collared and assigned studbook number mp1185. On September 16, AF861 was trapped for a second time and released on site. In October, the IFT documented four pups with the Middle Fork Pack; however, during the end of year population count, no uncollared wolves were observed with the three radio-collared wolves (AM871, AF861, mp1185). Per the definition in the Final Rule (USFWS 2009), the Middle Fork Pack was not considered a "Breeding Pair" in 2009. There were no mortalities, removals or translocations involving the Middle Fork Pack in 2009.

Paradise Pack (AM795, AF1056)
At the beginning of 2009, the Paradise Pack consisted of AM795 and AF1056. The IFT documented denning behavior in late spring to early summer. Six pups were observed in May. On July 6, the IFT investigated the depredation of an adult cow on the FAIR and determined it

was killed by wolves. This depredation was the first depredation incident for AM795 and the second incident for AF1056 in 365 days. At the end of June, one depredation incident on AF1056 expired, leaving both wolves with a single depredation assignment. During the annual population in January 2010, The IFT counted two uncollared wolves in addition to AM795 and AF1056; therefore, the Paradise Pack was considered a "breeding pair" in 2009 per the definition in the Final Rule (USFWS 1998). There were no confirmed mortalities, removals or translocations involving the Paradise Pack in 2009.

Rim Pack (AF858, AM1107, fp1186, fp1187)

In January, the Rim Pack consisted of two wolves (AF858, AM1107). Throughout the year, the Rim Pack was located within its traditional home range in the central portion of the ASNF. In April, the IFT documented denning behavior. In August, The IFT conducted a howling survey and heard a minimum of two pups. On September 25, the IFT captured, collared and released on site a female pup. The pup was assigned stud book number fp1186. On October 10, the IFT captured, collared and released on site a female pup. The pup was assigned studbook number fp1187. On October 13, the IFT documented a mortality signal on fp1186. The cause of death is still under investigation. In January 2010, during the annual population count, The IFT only documented the three collared wolves; therefore, the Rim Pack was not considered a "breeding pair" in 2009 per the definition in the Final Rule (USFWS 1998). No confirmed depredations, removals or translocations involving the Rim Pack occurred in 2009.

San Mateo Pack (AF903, AM1114)

In January, the San Mateo Pack consisted of AM1114 and AF903. Throughout most of the year, The IFT located the wolves within their traditional territory in the north-central portion of the GNF. On March 29, AM1114 and AF903 drop one depredation incident. AF903 had one remaining depredation incident and AM1114 had three depredation incidences in a 365 day period. On June 15, The IFT investigated a dead calf near Cat Springs, New Mexico and determined it was killed by wolves. The IFT assigned the depredation to AM1114 and AF903. At the time of the depredation, this was the fourth depredation incident assigned to AM1114 and the second to AF903 in 365 days. On June 19, USFWS issued a management decision allowing AM1114 to remain in the wild. At the end of June, a depredation assignment from 2008 on each of the wolves expired, leaving AM1114 with three depredation incidents and AF903 with a single depredation incident. During June, the IFT documented denning behavior and later discovered three dead pups in the vicinity of the den site. The IFT also used remote cameras and documented the presence of two abandoned pups. Both pups were captured and moved to captivity. The IFT observed at least one pup still accompanying the pack at the end of June. On June 26, AM1114 and AF903 dropped one depredation incident. This leaves one depredation incident for AF903 and three depredation incidences for AM1114 in a 365 day period. On September 8, AM1114 dropped two depredation incidences. This leaves both AF903 and AM1114 with one depredation incident from June 14, 2009 remaining for the 365 day period. In November, the Fox Mountain Pack moved into the San Mateo Pack territory. On December 21, the San Mateo Pack began showing movements outside their territory. The IFT documented no uncollared wolves in January 2010 during the annual population count; therefore, the San Mateo Pack was not considered a "Breeding Pair" per the definition in the Final Rule (USFWS 1998). There were no translocations or removals involving the San Mateo Pack in 2009.

8. Individual Wolf Summaries

M619
In January, M619 was observed traveling alone. Throughout the year, M619 was located in the north central portions of the ASNF and the GNF. During the annual population count in January 2010, The IFT observed M619 traveling with an uncollared wolf. There were no confirmed depredations involving M619 in 2009.

AF836
During the annual population count in January 2009, AF836 was located dead in Arizona. The cause of death was determined to be gunshot.

AM1039
On January 18, The IFT captured M1039 near Lookout Mountain, New Mexico. The next day, the IFT translocated M1039 near F1028 in the vicinity of Deep Creek, New Mexico to facilitate pair bonding between the two wolves. Subsequent telemetry monitoring indicated the wolves did not interact significantly. The IFT located AM1039 for the last time on January 26. Efforts to locate AM1039 since then have been unsuccessful. The wolf is considered fate unknown.

F1053
F1053 was born in the wild to the Saddle Pack but was transferred to captivity in May 2007 as a dependent pup. On February 17, the IFT placed F1053 into a chain-link pen within the Fox Mountain Pack territory (New Mexico) to provide a mate for AM1038**.** On February 25, the IFT released F1053 from the holding pen. The IFT received a report of an injured wolf in that vicinity on February 28; however, the wolf (F1053) died from a gunshot. The mortality is under investigation.

F1054
F1054 was born in the wild to the Saddle Pack (New Mexico) but was transferred to captivity in May 2007 as a dependent pup. On January 20, the IFT translocated F1054 into the Fox Mountain Pack territory in western New Mexico to provide a potential mate for AM1038. F1054 moved out of the BRWRA and was recaptured on January 24 near St. Johns, Arizona. The IFT, again translocated F1054 into New Mexico on January 25. Toward the end of the month, F1054 was located outside the BRWRA east of St. Johns. On February 11, the IFT captured the wolf 30 mi outside the BRWRA, north of St. Johns, Arizona. Following a general health inspection by the Reintroduction Project veterinarian, the IFT placed F1054 into a chain-link pen within the Fox Mountain Pack territory to allow the pack to locate it. After several days, the IFT decided to try a different female wolf from captivity due to the uncertain breeding status of F1054. The IFT transferred F1054 to the Sevilleta Wolf Management Facility on February 17.

F1106
F1106 remained a single wolf throughout 2009. On January 23, the IFT captured F1106 outside the BRWRA near the Luera Mountains in New Mexico. The IFT translocated the wolf to the Gila Flat release site on January 24. On February 18, the IFT received a report from a licensed trapper in New Mexico regarding a wolf captured in a legally set trap. The IFT responded to the

site on February 19 and determined the wolf caught in the trap was F1106. The wolf did not suffer any injury as a result of being trapped; therefore, it was transported and released back into the BRWRA at the Gila Flat release site in New Mexico. On May 12, The IFT investigated a dead cow near Sand Flat, New Mexico and determined it was killed by a wolf. This was the first depredation incident for F1106 in 365 days. F1106 continued to travel widely throughout the central and north-central portions of the GNF, as well as occasionally traveling outside the BRWRA boundary in New Mexico.

F1115

From January to May 2009, the IFT located F1115 in the north-central portion of the Gila Wilderness as well as in the central portions of the GNF. In June, F1115 was traveling in the north-central portion of the GNF. During July, The IFT documented F1115 traveling with M1156 of the Luna Pack (New Mexico). In August, the IFT considered M1156 and F1115 to be paired and members of the Luna Pack.

Summary of sighting reports received from the public from January 1 through December 31, 2009.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
# AZ Reports	**2**	**3**	**6**	**5**	**13**	**11**	**3**	**6**	**4**	**7**	**12**	**1**	**73**
Known Wolf Reports	0	0	1	1	1	2	1	0	2	1	0	0	**9**
Unknown/Uncollared Reports	0	0	1	0	1	0	0	0	0	1	1	0	**4**
Non-wolf Reports	2	2	3	2	6	8	2	4	1	2	9	1	**42**
Probable Wolf Reports	0	1	1	2	3	1	0	0	0	0	2	0	**10**
Not Enough Information	0	0	0	0	2	0	0	2	1	3	0	0	**8**
# NM Reports	**0**	**2**	**3**	**3**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**11**
Known Wolf Reports	0	0	0	0	0	1	0	0	0	0	0	0	**1**
Unknown/Uncollared Reports	0	0	0	1	0	0	0	0	0	0	0	0	**1**
Non-wolf Reports	0	2	3	1	0	0	0	0	0	1	0	0	**7**
Probable Wolf Reports	0	0	0	1	0	1	0	0	0	0	0	0	**2**
Not Enough Information	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total Sightings per Month	**2**	**5**	**9**	**8**	**13**	**13**	**3**	**6**	**4**	**8**	**12**	**1**	**84**

9. Personnel

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Jeff Dolphin, Wolf Technician
Beth Orning-Tschampl, Wolf Technician
Beth Wojcik, Wolf Technician
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Joel Weiss, Wildlife Manager
Aaron Hartzell, Wildlife Manager
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Steve Sunde, Pilot
Steve Dubois, Pilot

New Mexico Department of Game and Fish
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Jedediah Murphy, Wildlife Biological Science Technician

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