CATRON COUNTY, NEW MEXICO IMPACTS FROM THE MEXICAN GREY WOLF NON-ESSENTIAL REINTRODUCTION PROGRAM

- A COUNTY IN CRISIS-

SUBMITTED BY:
Catron County Commission
Catron County
P.O. Box 507
Reserve, NM 87830

June 18, 2012

EXECUTIVE SUMMARY

Catron County Commissioners have the statutory duty "to provide for the safety, preserve the health, and promote the prosperity "of its inhabitants. It cannot indulge in fantasies and notions of the good old days when wolves ran through the forest unfettered by the presence of man. The Catron County Commission does not support the Mexican Grey wolf reintroduction program; it asserts that it is an unnecessary expense to the taxpayers of our nation and a danger to its citizens. To that end we respectfully submit the *Catron County, New Mexico Impacts from the Mexican Grey Wolf Non-Essential Reintroduction Program - A County in Crisis.* It is a compilation of professional documentation based on years of field investigations in cooperation with USDA Wildlife Services, licensed mental health professional assessments and university impact assessments regarding actual financial losses to Catron county government, schools and businesses due to the Mexican Wolf Reintroduction Program.

Two reports by mental health professionals, Doctors Julia Martin and James Thal, document the psychological stress and symptoms of PTSD in children and parents who have witnessed predation by wolves: Julia Martin, M.D., *Inherent Potential for PTSD Among Children Living in the Mexican Gray Wolf Reintroduction Area,* June 12, 2007 and, James S. Thal, Ph. D., Psychological *Impact of Wolf Reintroduction: A Preliminary Study*, October 23, 2006. Captive bred wolves have demonstrated bold, fearless behavior and are inherently habituated to humans and human environs. Children have suffered psychological and physical stress, terrified after seeing their pets torn to pieces and killed in front of them by wolves. They must stand in shelters to wait for the school bus. For a period of several weeks sheriffs had to stand guard at the playground in Glenwood, NM because wolves were in the immediate vicinity of the school. Wolves have chased children and pets into their homes; urinated and defecated at homes and peered in the windows. The very real and greatest fear is that there may be a wolf attack on a human, especially on a young child. The fact that there are habituated wolves which seek out humans and human use areas is a serious concern. The County Commission is legally responsible for the health, safety and welfare of its citizens but all leaders have a responsibility to the citizens they serve.

Two reports by Western New Mexico University's Dr. Alexander Thal, discuss the economic impacts of the wolf program: *Economic Impacts of the Mexican Grey Wolf Depredation on Family Cattle Ranching in Catron County, New Mexico-Final Report on the Results of the Wolf Depredation Study.* Calf crops on the ranches surveyed fell by 15 percent since wolves were introduced on the range. The annual cattle losses are 1,400 head of cattle resulting in more than $600,000 losses to County government and schools, and a loss of $10 million annually in livestock production.

Nick K. Ashcroft, Ph.D., et. al. peer reviewed report, *Reestablishment of the Mexican gray wolf: The Economics of Depredation* provides a socioeconomic basis for discussion and decision-making for family enterprises in the recovery area and explores the faulty reasoning that led to the reintroduction program. Despite the fact that there was a limited body of research concerning the reintroduction of carnivores that live and hunt in packs, litigation by environmental groups pushed the release of captive wolves forward. Current recovery documents reflect the belief that most wolves will not depredate even when livestock are present, and that ranch failures are not expected to occur. They contradict the historic evidence of depredation by wolves. Moreover, Ashcroft's studies, and the historical evidence, demonstrate that family ranches disproportionately bear the economic impacts of wolf reintroduction and are likely to of fail. Reestablishment of this subspecies has generated extensive emotional, political, biological, and socioeconomic debate. This debate has failed to yield consensus regarding the success or failure of the recovery program. The resulting polarity has diminished constructive dialogue and prevented mitigation of the issues

A field study by Jess Carey, Catron County Wildlife Investigator, *Comparability of Confirmed Wolf Depredations to Actual Losses Wolves Denning in Calf/Yearling Core Areas, Catron County, New Mexico*, compares cattle losses on 5 New Mexico ranches before and after the inception of the Mexican wolf re-introduction program. When wolves moved onto the ranges each ranch experienced a significant decrease

in the size of fall calf crops, and revenue. Two of the ranches went out of business, one remediated the situation by moving to other pastures and hiring a range rider and another sold off all livestock until 2010. Compensation programs have not alleviated the cost incurred from massive losses of cattle. During the period of this study, ranchers received $8100 in compensation for over 600 losses that totaled more than $380,000. It was determined that for every confirmed depredation by wolves, there were at least 8 more losses. This figure may prove to be drastically low.

A companion field study by Jess Carey, entitled *Mexican Wolf Recovery Collateral Damage Identification, Catron County, New Mexico,* portrays wolf depredation in graphic form. Although gruesome, the pictures show the extent of injuries and suffering that animals incur from wolf attacks and what livestock producers contend with. Jess Carey, Catron County Wildlife Investigator's *Catron County Wildlife Investigator Results of Investigations/Complaints Report, April 2006-April 2012* provides actual field investigation documentation regarding wolf/human encounters.

The Mexican wolf reintroduction program would benefit from further analyses. Questionable US Fish and Wildlife Service methodology and determinations have eroded trust and caused distress to citizens on public and private land. The polarization and feelings of hopelessness and helplessness that this program has generated required Catron County Commission to enact protective measures for our citizens, even with the threat of jail and prosecution.

It appears that the reintroduction of the Mexican Gray Wolf cannot be accomplished without destroying the rights and lives of others- they become collateral damage.

LIST OF PUBLICATIONS

Title Page

Executive Summary

List of Supporting Documents

1. Martin, Julia M.D., *Inherent Potential for PTSD Among Children Living in the Mexican Gray Wolf Reintroduction Area*, June 12, 2007.

2. Thal, James S. Ph. D., licensed psychologist, *Psychological Impact of Wolf Reintroduction: A Preliminary Study*, October 23, 2006.

3. Thal, Alexander J. Ph.D, and Brown, Tyler**,** *Economic Impacts of the Mexican Grey Wolf Depredation on Family Cattle Ranching in Catron County, New Mexico-Final Report on the Results of the Wolf Depredation Study.* Submitted to New Mexico Game Commission, May 7, 2011.

4. Thal, Alexander J. Ph.D., *Assessment of the Economic Impacts from the Non-Essential, Experimental Mexican Wolf Program*, Western New Mexico University, February 2, 2007.

5. Ashcroft, N. K., Ph.D., C. P. Mathis, S. T. Smallidge, J. M. Fowler, and T. T. Baker. 2009. *Reestablishment of the Mexican gray wolf: The Economics of Depredation.* Range Improvement Task Force Report 80. New Mexico State University, Las Cruces, NM.

6. Carey, Jess, *Comparability of Confirmed Wolf Depredations to Actual Losses Wolves Denning in Calf/Yearling Core Areas, Catron County, New Mexico*, January 21, 2011.

7. Carey, Jess *Mexican Wolf Recovery Collateral Damage Identification, Catron County, New Mexico.*

8. Carey, Jess, *Catron County Wildlife Investigator's Log of Complaints and Investigative Findings Report 2006-2012*.

Inherent Potential for PTSD Among Children Living in the Mexican Gray Wolf Reintroduction Area

Julia Martin, M.D.

June 12, 2007

Inherent Potential for PTSD Among Children Living in the Mexican Gray Wolf Reintroduction Area

Julia Martin, M.D.
June 12, 2007

Introduction:

In the spring of 1998 the Mexican gray wolf, on a list of endangered species, was reintroduced into ranching country in west-central New Mexico and east-central Arizona. The wolves in question had been primarily bred and hand raised in captivity.

The species was most probably endangered because the wolves had been systematically eliminated over a period of 150 years by ranchers who were settling the area and developing herds of beef cattle to support themselves and their families. The cattle industry in the west had become big business in the mid 1800s when, during the Civil War, the governments of both the North and the South were buying beef to feed their armies.

It was very apparent to the ranchers that wolves and cattle are not gregarious companions. It was also very apparent that wolves were also not compatible with the normal activities of family life within the ranching areas.

Ranching continued to be both a way of life and a profitable business in the areas above-described until the concept of "turning back the clock" became popular.

Americans are proud of their heritage. It is admirable to want to remember the past and preserve species that played a role in our lives. However, reintroducing wolves in the Southwest is about as intelligent as it would be to reintroduce smallpox.

Within a few years of the release of the initial wolves, it became apparent to the inhabitants of eastern Arizona and western New Mexico that the reintroduction of the Mexican gray wolf was contributing to the demise of their lifestyles and their communities.

Of paramount concern to the population was the effect of the wolf reintroduction on the children in the region.

Study overview:

As a medical doctor with a background in both pediatrics and child psychiatry, I was asked to meet with ranching children and their families within the reintroduction area to ascertain the psychological effects of the wolf program upon the children.

I was able to compare the results of the parent questionnaire which I had constructed for parents in the wolf reintroduction area with questionnaires circulated to ranching families in New Mexico and Arizona who do not reside in wolf country. This was made possible through the efforts of the Cattle Growers Associations in New Mexico and Arizona, thus obtaining a control group for evaluating my findings.

In my study group each child was seen face to face and personally interviewed by me between February 1 and March 15, 2007. Children were seen either in the schools which they attended or in their homes. Questionnaires were completed by the parents.

Weaknesses in this study include:

1. The lack of random selection of subjects from the wolf reintroduction area. (All the ranches in this area had been visited by wolves.)
2. Possibility of prejudice on the part of the author, relative to her residence on a ranch within the reintroduction area.
3. The relatively small numbers in each group. It should be noted that because the study involves ranching, the total population interviewed within the reintroduction are included at least 90% of all families with children living on actual working ranches within the area.

Results of the study:

To date questionnaires have been obtained from equal numbers of children living on ranches in both the wolf reintroduction are and the ranching areas of Arizona and New Mexico where the Mexican gray wolf has not been reintroduced. Several returns were not calibrated because of technical concerns (e.g. reports about children three years of age or less).

Within the reintroduction area parents report that:

93% of their children startle more easily (than prior to the wolves arriving).

87% of the children believe that the wolves are presenting a danger to themselves or family member. (Due to depredation of livestock and family pets, this IS a VERY REALISTIC concern).

80% of the children realize that they are HELPLESS to control or stop the events they see occurring around them because of wolves in proximity to their homes. One or more children have watched wolves kill their pet cats. Another child watched her dog be attacked by wolves and later discovered the carcass of her horse which had been killed by a wolf pack in the horse's own corral.

80% of children in the reintroduction area who previously slept in their own beds/bedrooms through the night now frequently get out of their beds during the night and come into their parents' rooms, wanting to get in bed with their parents.

73% of the children awaken in the night crying or screaming because of nightmares (not present prior to the wolf reintroduction).

73% of parents state that they believe that the wolf events which have occurred involving their children have been very traumatic for the children.

67% of parents whose children have been involved in wolf events report that their children have "become more clinging". Note: Among the children who have not been exposed to wolves (control group) 40% are reported to have experienced recent traumatic events. None of these children are reported to have become more clinging.

53% of the children who have experienced traumatic events involving wolves now appear to be unable to remain focused during activities which they participated in for age appropriate lengths of time prior to their exposure to wolves.

None of the youngsters exposed to wolves are reputed to have exhibited any of the symptoms described above prior to their exposures to the Mexican gray wolf.

It is definitely noteworthy that the behaviors/symptoms described above constitute the major symptoms involved in the diagnosis of Post Traumatic Stress Disorder.

Questionnaires returned from ranches outside of the wolf reintroduction area indicate that 40% of these youngsters have experienced one or more recent traumatic events not involving wolves. 20% of these children have recently developed a fear of snakes. 10% are having trouble staying focused on the events they were usually able to stick with for age appropriate periods.

Summary:

Post Traumatic Stress Disorder is a major psychiatric illness. While it may exist short term, and dissipate when precipitating factors (e.g. wolves) are removed, the disorder frequently becomes permanent. Occurring in childhood it may impede the child's normal psychological development. Certainly ongoing exposure to the events which led to the original symptoms can be expected to interfere with development of a stable psychological outlook.

The serious psychological problems currently being expressed by children in the wolf reintroduction areas of Arizona and New Mexico can best be addressed by the immediate relocation of the offending wolf population.

In researching the reintroduction project it is apparent that the ranching families within the area were not consulted prior to reintroduction of the wolves.

As a physician who has dealt with children now for 50 years, I am convinced that concerns for the welfare of the children involved must take precedence over any and all concerns for the wolf project.

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PSYCHOLOGICAL IMPACT OF WOLF REINTRODUCTION:

A Preliminary Study

James S. Thal, Ph.D.

October 22, 2006

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PSYCHOLOGICAL IMPACT OF

WOLF REINTRODUCTION:

A Preliminary Study

Population Studied:	Individuals impacted by wolf reintroduction
Dates of Interviews:	May and July 2006
Author:	James S. Thal, Ph.D. Psychologist
Date of Report:	October 22, 2006

PURPOSE OF STUDY

A preliminary study of the psychological impact of wolf reintroduction was requested in order to assess the social and emotional impact on referred individuals.

METHODOLOGICAL LIMITATIONS

Each individual who was interviewed was identified as a result of suspected psychological trauma resulting from one or more encounters with wolves in the re-introduction areas. Interviews were conducted by this evaluator, in private, at locations which included a school, a community center, and at several ranch locations. Interviewees were seen as individuals, couples, or in family groups of three to five persons. One individual, who was unavailable for a face-to-face interview, was interviewed by telephone. Interviewees were assured of anonymity.

This exploratory study was not intended to be scientifically rigorous but rather, clinical in nature. The approach employed was intended to make observations, develop hypothesis, and generate ideas for further study and/or immediate intervention. An attempt was made to follow standard crisis interviewing and “triage” techniques, though no attempt was made to employ random sampling techniques or empirical testing.

Approximately 35 individuals were seen ranging in age from four years of age to 60 years of age. Most individuals interviewed were reporting ongoing encounters with wolves in reintroduction areas (though some resided in towns or communities rather than on ranches in remote locations). However, one group of individuals reported no encounters with wolves for several months because the wolf pack had been relocated to another area. About half of the interviewees were ranchers or members of ranching families.

FINDINGS

Many, but not all, of the individuals interviewed described varying degrees of emotional distress resulting from near encounters with wolves in the effected areas. In some cases, the individuals interviewed had been significantly traumatized by what they reported as wolf attacks on their pets and livestock.

In almost all cases, the interviewees reported some degree of insomnia along with continuing vigilance and anxiety about their own welfare, the welfare of their children and/or spouses, and the welfare and safety of their animals. Among the children in the groups interviewed, bedwetting, sleeplessness, fearfulness, and nightmares were evident (though not in all of the children). The worst impacts appeared to be in two instances in which family pets or small livestock were killed by wolf attacks.

It appeared that in all cases, the impacted individuals had made moderate to significant changes in their daily activities as a result of the reintroduction of the wolves in their respective areas. For example, mothers reported that younger children are more closely supervised and no longer permitted to play alone outside, particularly at some distance from their homes and ranch houses. Most individuals reported carrying a weapon because of their perception of a threat by the wolves, relative to an attack on them, their family members, or their animals.

An additional lifestyle modification reported by many impacted individuals included hiking, walking, or riding only with companions and never alone. Although, at least one individual reported no personal fear of attack, but rather a concern regarding continued attacks on pets and livestock.

Other safety accommodations included keeping pets and farm or ranch animals penned for safe keeping. Nonetheless, nearly all individuals interviewed reported chronic fear for the welfare of family members, neighbors, and their animals. The reported level of fear ranged in severity from mild to moderately severe. In the case of two children in two different locations, moderate to severe levels of fear were reported by their mothers.

Other concerns and stressors of impacted individuals seemed to relate to broader, more global concerns which, in turn, appeared to have induced chronic feelings of helplessness and hopelessness in afflicted individuals. Several adults reported fears of losing a cherished way of life (i.e., ranching) and an accompanying diminishing of the quality of their lives. Similarly, several of the adults verbalized opinions that they are helpless to do anything about the threat that they believe the reintroduced wolves present to them, their families, and their animals.

Most adults interviewed appeared to have adopted a “siege mentality,” believing that things would only get worse and that no one in any official capacity is listening to them. During many of the interviews, impacted individuals voiced concerns that government officials have been dishonest and misleading. Some expressed fears that significantly higher numbers of wolves will be released in their areas and that other now-vanished predators will also be reintroduced in their area (e.g., grizzly bears and jaguars) leading to increased worrying about the threats that those predators would present.

Many of the adults interviewed appeared to be quite demoralized and, perhaps, clinically depressed. Symptoms of posttraumatic stress disorder were apparent (in both adults and children), though some individuals reported that symptoms such as nightmares have diminished over time with the removal of wolves from their immediate area.

It is clear that the individuals involved fear a loss of income and serious damage to their way of life. Overall, however, the greatest fear focused around what most individuals believe to be a very real and present threat of a wolf attack on a human, most especially on a young child.

PROPOSED REMEDIES AND INTERVENTIONS

In view of the above findings of moderate to severe stress evident in those interviewed, the followings measures are recommended:

Mental Health Outreach

Community counseling services should be made available to children and adults most afflicted with apparent stress-related disorders (i.e., chronic anxiety, tension, depression, insomnia, nightmares, etc.). It is estimated that about 24% of those interviewed might fall into this category. Due to the remote locations of many of the individuals in need of psychological interventions, it is probably most realistic to adopt a service delivery model of in-home or on-site counseling in which a field based mental health professional could visit afflicted individuals.

Psychiatric Services

Some individuals interviewed for this preliminary study appeared to warrant psychiatric care, relative to antidepressants, antianxiety, or other appropriate psychoactive medications. Those individuals will necessarily need to be seen at mental health centers in their respective areas.

Further Study Needed

The mental health of many of the individuals who were interviewed for this study appears to have declined in demonstrable ways. Further investigations would be helpful in defining the scope of the problem. Formal psychological measures could be administered to participants to provide more precise diagnostic data regarding depression, anxiety, anger and other clinical syndromes. Rating forms for children can be completed by their parents or teachers to provide additional objective information about a given child's adjustment. Use of anonymous (adult and adolescent) self-report surveys, specifically designed for the populations to be studied should be employed as well.

Some important areas of inquiry (e.g., the occurrence of increased domestic violence, substance abuse, etc.) were not addressed in this current study and certainly warrant closer investigation. The literature strongly suggests that stressors such as those impacting individuals in the wolf reintroduction areas (i.e., economic losses, family disruptions, etc.) are often accompanied by increases in family violence, failing grades in school, drug/ alcohol abuse, and suicide attempts/completions.

Decision makers are encouraged to use the research capabilities of the psychology departments of the state universities in New Mexico and Arizona to explore these social and psychological issues more fully.

Policy Review

Clearly, some form of policy relief seems to be in order. Virtually all

adults interviewed feel that significant wolf reintroduction planning is in need of important review and revisions. It is especially important that communication between policy makers and impacted individuals be clear, reliable, and unambiguous. Nearly all adults interviewed for this study expressed a high degree of distrust of information provided by involved government entities.

Financial Advisement

Practical financial advisement would likely benefit several of the more severely impacted individuals such as ranch owners and managers who were interviewed for this study. Most are reporting significant economic losses which they believe could render their ranching operations unsustainable. Some ranchers interviewed expressed urgent concerns about the immediate viability of their livestock operations with at least one individual reporting the impending sale of their ranching operation. Financial resource consultants might help these individuals marshal their personal resources and those available in their regions.

Implementation of Protective Technologies

Almost all individuals interviewed expressed some level of fear regarding the threat presented by the wolves which have been reintroduced into their respective areas. It appeared that a significant need exists for safety planning for families and use of better protective technologies which could assist the impacted individuals in safeguarding themselves, their children, and their animals. Virtually all individuals reported a moderate to severe feelings of vulnerability to attack.

Special Duty to Safeguard Children

Parents, community leaders, and reintroduction managers have a special duty to safeguard the children impacted by the changes in their lives. At minimum, children need to be shielded from the heated rhetoric of their elders who are embroiled in the controversy surrounding the reintroduction of the wolves. The “worst case” scenario, as reported by many of the individuals, especially parents, interviewed is clearly that of a wolf attack on a child. If such a tragedy were to occur, it is impossible to predict the full extent of the community’s response. It seems likely, however, that the basic goal of reintroducing a wild population of wolves would be significantly jeopardized by the backlash that could develop. Great care needs to be exercised to ensure that an attack on a child does not occur since that potentially catastrophic event could precipitate a major crisis for the communities involved and could result in violence toward those perceived as responsible for planning and promoting the reintroduction of wolves in the effected areas.

James S. Thal, Ph.D.

JST:tsk

Economic Impacts of the Mexican Grey Wolf Depredation on Family Cattle Ranching in Catron County, New Mexico

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Final Report on the Results of the Wolf Depredation Study

Submitted to:
New Mexico Game Commission
and
Catron County Commission

Submitted by:
By Alexander J. Thal, Ph.D., Southwest Center for Resource Analysis
with Assistance from Tyler Brown

Revised July 27, 2012

1. **Background:**

   a. Previously conducted assessment of the Mexican Grey wolf depredation on livestock from 2000 to 2006, using a multiple sources of wolf depredation accounts; see *Assessment of the Economic Impacts from the Non-Essential, Experimental Mexican Wolf Program*, Western New Mexico University, February 2, 2007.
   b. The earlier assessment cited above and the current depredation assessment in this report geographic area was conducted in Catron County within the Blue Range Recovery Area.
   c. Problems with the old methodology in #1, above: Most wolf impacted ranchers have stopped notifying US Fish Wildlife Service, allegedly due to lack of USFWS effective responses. Hence, it required designing a different method to estimate depredation losses.
   d. USFWS faces similar problems with accurate accounting about the number of wolves.
   e. Best approach to get an approximation of depredation from wolves is by determining calf crop and losses.
   f. Ranchers keep accurate accounts for their calf crops, reflected in their sales records.
   g. This assessment canvassed all wolf impacted ranchers in Catron County.

2. **Results of Wolf Depredation Study:**

   a. Refer to concluding # 6. Implications on pages 6 & 7.
   b. 1,172 calves lost annually due to wolf depredation. Note wolf depredation in this report includes actual reported cattle killed by wolves and cattle stress by wolf attacks, resulting in reduction in calf crops for the affected ranchers.
   c. 4,688 calves from 2007 through 2011 due to wolf depredation.
   d. Results in a loss of 15% calf crop per year; unsustainable to pay for ranch operations.
   e. Four ranchers have already gone out of business due to wolf depredation.
   f. Results in over $2.4 mill. in 4 yrs.; $600,000/yr.
   g. Catron County tax base source of income: 48% from ranching operations; base industry.
   h. Results in annual loss to county schools and government: $35,200 - a teacher's salary.
   i. Total estimated direct economic loss from 2000 thru. 2010: $5 mill.
   j. Total economic impacts thru. 2010: $5.6 million.

3. **Importance of Livestock Production to Catron County:**

Cattle ranching are the economic base of Catron County, supporting:

   a. $4.1 million annually to the local economy.
   b. $10 to $15 million to the state's economy.
   c. $517,000 annual support to schools and county government.
   d. Livestock production support approximately 48% of County tax base.

4. **Methodology:**

   a. Designed questionnaire survey based on calf crop records.
   b. Canvassed 32 ranchers that suffered livestock losses from wolf depredation. Received responses from 21 ranchers.
   c. Estimated percentage of calf crop and percentage of average calf losses before & after wolves on ranch. See table, below.
   d. Peer reviewed responses from New Mexico State University, Nick Ashcroft, Ph.D. and Catron County Wildlife Investigator, Jess Carey; conducted two subsequent surveys for validity and reliability.

5. **Method used to derive Multiplier factor:**

a. Objective: Derive an estimate for probable cattle losses due to Mexican Grey wolf depredation.

b. Background: It is an undisputed fact that wolves prey on cattle. Cattle ranchers in the area have complained about depressed calf crops in the presence of the wolf. However, it is difficult to find and confirm all wolf predation on livestock. Therefore, this paper attempted to estimate cattle losses due to wolf depredation since 2006 and determine approximately how many cattle are killed by Mexican Grey wolves that go unconfirmed by the USFWS.

c. Data: The first piece of information needed was to find out the average calf crop for the area before the absence of wolves. Twenty-nine ranches in the area were surveyed. Twenty five ranches responded. Twenty-one ranches had calf crop data that pre-dated the presence of wolves. These ranches represented 7,817 head of breeding cows, excluding bulls. The results of the survey are as follows;

Ranch	Pre-Wolf Average Calf Crop
AA	93%
B	89%
BB	99%
C	97%
D	96%
E	100%
F	95%
H	90%
I	89%
K	94%
L	80%
M	96%
N	74%
O	94%
P	92%
Q	60%
S	86%
T	95%
V	60%
X	85%
Y	98%
Average	**89%**

Therefore, we used an average calf crop for the area before wolf reintroduction to be approximately 89%.

The next step was to determine what calf crop averages were for the same ranches after the wolf was present and compare calf crop averages. The results are as follows;

Ranch	Pre-Wolf Average Calf Crop	Calf Crop with Wolf Present
AA	93%	85%
B	89%	70%
BB	99%	95%
C	97%	90%
D	96%	83%
E	100%	88%
F	95%	50%
H	90%	82%
I	89%	47%
K	94%	67%
L	80%	50%
M	96%	91%
N	74%	40%
O	94%	73%
P	92%	86%
Q	60%	60%
S	86%	71%
T	95%	85%
V	60%	60%
X	85%	85%
Y	98%	95%
Average	**89%**	**74%**

In the presence of the wolf the average calf crops on the ranches surveyed fell by 15 percentage points. Some ranches were affected more than others, and a few did not notice any change. But no ranches saw an increased calf crop after the wolf presence.

6. Implications:

Based on the information above, the Mexican Grey wolves have reduced calf crops by 15 percentage points on an annual basis, resulting in:

- 1,172 calves lost annually due to wolf depredation
- 4,688 claves from 2007 through 2011 due to wolf depredation

Note, that the above data results were based on 21 ranch respondents, mostly in the Gila National Forest portion of Catron County. There are over 75 forest grazing allottees and over 200 ranches in Catron County. Many county ranchers are not aware of their calf losses due to wolves because of the terrain and the fact that there is no calf signs at the kill site. Hence, this study's results are conservative estimate of wolf depredation on Catron county ranches.

The next question explored was the determination of how many total head of production cattle are exposed to the wolf range in Catron County, New Mexico. Based on Catron County Extension Agent, Bureau of Land Management, New Mexico State Land Office and U.S. Forest Service data, it is estimated that approximately 27,000 head of production cattle live within the range of the wolf in Catron County exposed to wolves – on an average four year period. If the USFWS increase Mexican Grey wolves to a target population of 200 wolves from their current estimate of 50 wolves, it could result in four times the current cattle losses, resulting in:

- 4,700 calves lost annually due to wolf depredation, and
- 19,000 calves lost in a four year period

The problems for Catron County base industry certainly is the current and potential number of cattle losses. But another related concern is the short and long term sustainability of these ranches, mainly family ranches, given a15% calf crop loss from wolf depredation. The average cattle ranch rate-of-return is approximately at break-even point. For the smaller county family ranches, it's a negative return. Yet, it's been an integral way to sustain their customs and cultures with Anglo and Hispanic ranchers in the county, who derive their household incomes from a variety of business endeavors.

The wolf program is a significant, cumulative adverse impact on the cattle ranchers' investment-backed expectations; the ability to make a living from ranching. This would also significantly impact the ability for the rancher to pay back their ranch-related operational and federal assistance loan contracts.

These significant adverse effects would also have significant adverse affects on the lifestyle and social fabric of the county and will most likely result in ranchers being forced to leave the community. If the ranch base private property is sold to a developer the community would see an influx of new people but it would lose some of the culture and lifestyle tied to ranching. This would transform the values, attitudes and beliefs (known as "customs and cultures") from rural, land- based communities to predominantly urban-oriented newcomers (USDI-BLM, Final Environmental Impact Statement, Healthy Rangeland Standards & Guidelines, 1999).

Finally, the loss of more ranches would affect the private land use, income and cost to Catron County government and schools. There's a high probability that the private ranchland would be converted residential subdivision development. This land conversion would have direct, indirect and cumulative fiscal impact on Catron County tax base. A land use change from agricultural to residential land would have measurable fiscal costs to the County in providing more county services and road maintenance. It could affect the resource conditions and trends if ranches are converted to subdivision (see USDA DOI - BLM Draft EIS: Healthy Rangelands Standards and Guidelines, Urban Impacts section). This land conversion would result in increased costs to the Forest Service in range infrastructure resource protection and law enforcement.

This would be a tragedy, given the fact that there are viable alternatives to the status quo of allowing USFWS wolves to destroy people's livelihoods.

Appendix: Survey Form and Background

Wolf Impacted Rancher Survey Purpose and Need

Purpose of Survey: To find out how many cattle have been lost due to wolf depredation.

The Approach: Ask the ranchers who have lost cattle due to wolf depredation through phone and personal interviews with written up survey questions. The two basic questions are:

1. Since 2006 how many cattle have you lost by size class? What was our average annual calf losses before you had wolves on your area, compared to your average annual calf losses when you had wolves in your area.

Use of Study: All ranchers interviewed and their specific information shall be confidential. The draft report will be submitted back to the ranchers interviewed for their review and comment. Specific uses of survey results include:

- To update the estimated number of cattle lost to wolf depredation.
- Estimate the magnitude and impacts of cattle lost to wolf depredation such as the economic losses to ranchers, direct, indirect and induced losses and circulating dollars associated with cattle losses.
- By determining losses, it is possible to estimate what the trends might be, especially if the agencies increase the number of wolves.
- The results of the survey can be used to show the economic damages that have been caused by the introduction of the wolf.
- Because the survey report is the best available account of wolf depredation on cattle, the survey report can be used in the up-and-coming wolf rule change EIS.
- The results of survey can help Catron County Commission estimate the financial effects on the County government delivery of services to its residents because close to 50% of its tax base is supported by livestock production, its base economy.

Benefits of Survey:

- Provides general public and wolf agencies with a written document as t the number of cattle and associated economic losses due to wolf depredation.
- Provides observable data that raises more questions and social costs associate with the wolf program.
- By showing economic damages from wolf depredation, it builds the case for taking of private property.
- By showing economic damages from wolf depredation, it provides a basis for fair compensation to the effected counties.

Survey to Estimate Wolf Depredation on Cattle

Confidential - for internal Discussions Only

To: Ranchers that have suffered cattle losses due to Wolf Depredation.

Subject: Phone Survey wolf impacted ranchers

Purpose of Survey: To find out how many cattle have been lost due to wolf depredation.

The Approach: To cattle ranchers who have lost cattle due to wolf depredation through phone and personal interviews two basic questions (outlined below) and more detailed questions about losses to discuss.

The two basic questions are:

1. Since 2006 how many cattle have you lost by size class (calves, yearlings, cows and bulls)?
2. What was our average annual calf losses (in actual numbers and/or percentage) before you had wolves on your area, compared to your average annual calf losses when you had wolves in your area?

To: Ranchers that have suffered cattle losses due to Wolf Depredation.

Subject: Detailed Survey Questions to Ranchers Impacted by Wolf Depredation

We are trying to up-date the number of cattle lost due to wolf depredation. We have estimates from 2000 through the year 2006 as to the number of cattle lost to wolves. The only way to find out how many cattle have been lost is to ask the impacted ranchers via phone interviews/surveys.

Would you consider completing the survey? Your input and guidance shall remain confidential.

Our survey questions include: What is the number of cattle that you estimate were lost (death and injury) due to wolf depredation: this year, last year, each year since 2006, from 2006 back to the year 2000?

It would help if your cattle information is broken down by size class: calves, yearlings, cows and bulls). I would also help if you could break down losses according to cattle killed or cattle injured.

Note, your information shall remain confidential.

A. For 2009:

1. How many cattle (by size class) do you estimate you have lost (killed or injured) thus far this year (2009)?
2. How many of these losses do you estimate were due to wolf depredation do you estimate?
3. How many losses were due to other causes do you estimate for 2009?
4. Would you care to mention how many wolf related losses were reported to WS/USDA?
5. How many losses were recorded by WS as, *confirmed, probable,* or missing?

B. For last year, 2008:

1. How many cattle do you estimate you have lost in 2008?
2. How many of these losses do you estimate were due to wolf depredation do you estimate?
3. How many losses were due to other causes do you estimate for 2008?
4. Would you care to mention how many wolf related losses were reported to WS/USDA?
5. How many losses were recorded by WS as, *confirmed, probable,* or missing?

C. For 2007:

1. How many cattle do you estimate you have lost thus far in 2007 do you estimate?
2. How many of these losses do you estimate you have were due to wolf depredation do you estimate?
3. How many losses were due to other causes do you estimate for 2007?
4. Would you care to mention how many wolf related losses were reported to WS/USDA?
5. How many losses were recorded by WS as, *confirmed, probable,* or missing?

D. For 2006 back to 2000:

1. How many cattle do you estimate you have lost thus far this year (2009) do you estimate?
2. How many of these losses do you estimate were due to wolf depredation do you estimate?
3. How many losses were due to other causes do you estimate for 2009?
4. Would you care to mention how many wolf related losses were reported to WS/USDA?
5. How many losses were recorded by WS as, *confirmed, probable,* or missing?

Please provide Your Additional Comments:

Thank you for your help. We will get you a draft of our survey results.

Catron County Initial Assessment Report (IAR):

Assessment of the Economic, Social, Cultural and Distributional Impacts From the Non-Essential, Experimental Mexican Wolf Program

Prepared for Catron County Commission

Prepared by Alexander J. Thal, Ph.D.
Southwest Center for Resource Analysis
Western New Mexico University

February 2, 2007

EXECUTIVE SUMMARY

The Catron County Initial Environmental Assessment Report is intended to identify the damages and negative impacts created by the None Essential, Experimental Mexican Gray Wolf Reintroduction Project, and to suggest mitigation plans in order to preserve the economic viability, customs and cultures, and property rights of the citizens of Catron County.

- Psychological impacts to families, particularly children, (page 6)
- Social impacts (page 6)
- Economic impacts (page 7)
  - Total loss in cattle alone is $499,156
  - 8 – 10 affected ranches
  - Ranchers represent 50% of county tax base
  - Loss of approximately $678,987 to Catron County economy
  - Loss of approximately $900,00 to New Mexico economy
  - Projected cattle losses (pages 9, 10, and 11)
- Impacts on Customs and cultures of Catron County (page 13)
- Property rights implications: “take” of personal and real property without fair compensation (page 15)
- Civil rights implications (page 15)
- Possible violation of Federal rights protection requirements (page 16)
- Mitigation (page 19)
  - Health and safety of humans
  - Early notification of wolf location to lessen cattle depredation
  - Rancher Incentive proposal (page 23)
  - Fair compensation to keep ranchers in business proposal
  - Funding (page 24)

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I. Purpose of the Initial Environmental Assessment Report and Need for Action

The Catron County Commission has identified the following primary objectives in its *Environmental Planning and Review Ordinance* (Ordinance # 002-93):

To disclose to federal and state decision makers and the public the significant environmental effects of proposed government actions on the physical environment, customs, culture, property rights and economic stability of Catron County. The Catron County Comprehensive Land Use & Policy Plan, Part II, Chapter 1, and Appendix 18. (40 CFR §1504.2(b)4)

1. To identify ways to avoid or reduce damage or negative impacts to the environment by requiring implementation of feasible alternatives or mitigation measures.

2. To identify ways to mitigate or eliminate adverse affects on both the physical and socioeconomic environment.

3. To prevent injury to the physical and socioeconomic environment by requiring implementation of feasible alternatives to mitigation.

4. To require intergovernmental coordination and joint planning in the environmental planning and review process in Catron County.

5. To encourage and enhance public education and participation in the environmental review process.

6. To plan and manage natural resources in a manner that is consistent with community and environmental standards.

Given these objectives, *Catron County Initial Environmental Assessment Report* (IEAR) is designed to analyze the impacts of the U.S. Fish and Wildlife Service Five-Year Review According to Catron County Environmental Planning and Review Process. The IEAR is prepared when there is an indication that an effect on the environment (physical, social, cultural, property rights, and/or economic factors) will result from propose federal agency(s) actions. The EIAR is similar to NEPA environmental assessment documentation.

According to the County Environmental Planning and Review Ordinance, the *Initial Environmental Assessment Report* will be prepared when any change in the environment (physical, social, cultural, property rights, and/or economic factors) will result from proposed federal agency(s) actions. The Catron County Commission has repeatedly asked to jointly conduct impact assessments regarding the Non-Essential, Experimental Mexican wolf introduction program. The County requested cooperating agency status regarding the Mexican Wolf Project Five-Year Review and the proposed moratorium.

The County stated to the U.S. Fish and Wildlife Service (USFWS) that

…it supports the protection of native wildlife species that are threatened or endangered. However, over the last five years the Mexican wolf reintroduction program has been ineffective in protecting native wolf species, and the consequences to Catron County have been devastating.

Based on these continued (and increasing) problems with the Non-Essential, Experimental Mexican wolf program and resultant disproportionate impacts on psychologically traumatized people, small businesses, communities and the tax base to the County the Catron County Commission is conducting its own initial environmental assessment report. Due to significant impacts, this report seeks not only to understand the general extent of impacts, but also to determine whether full EIS and Environmental Impact Report (EIR) are needed.

The President's Council on Environmental Quality (CEQ) is explicit about involving federal and non-federal governments "to the maximum extent possible" as joint planners in the environmental documentation process. The purpose of involving other government entities is to reduce duplication of effort and gain "local" expertise for a more comprehensive assessment for full disclosure of environmental effects. Refer to 40 CFR §1506.2.

Catron County Commission's purpose and need for action is to insure that the USFWS Five-Year Review assessment provides full disclosure to the public regarding the environmental effects to the human environment. Hence, Catron County Commission submits this Initial Environmental Assessment Report to be incorporated into the Five-Year Review section on the socioeconomic impacts, pursuant to 40 CFR §1506.2. The County Commission also requests that the USFWS consider the analyses and results of this IEAR in making their decision in selecting the preferred alternative. The preferred alternative should be based on the need to protect humans from habituating wolves and to reduce wolf depredation on livestock to protect the tax base for Catron County government and schools.

II. Catron County Impacts from the Mexican Wolf Program

Effects to people and the functioning of their communities are complex. Some, like income and employment changes, are quantifiable. Others, including values and beliefs, must be dealt with qualitatively. Alternatives are evaluated relating to change from current condition for the following socioeconomic factors: financial, economic, social (individual, family, community, and county) customs, cultures, and distributional effects.

Since this assessment addresses health and safety as highest priority impact, it is addressed first.

A. Psychological Impacts to Families

A certified psychologist assessed the psychological effects on families, adults and children suffered when wolves were encountered, primarily near their homes. The psychological effects on families and individuals experiencing wolf encounters varied in degree, from moderate to severe:

- Insomnia in both adults and children.
- Chronic nightmares.
- Bed wetting by children.
- Significant changes that include, but are not limited to, stressors ralted to altering daily routines, staying nearer to home, constant parental watch.
- Feelings about the potential loss of livelihoods and financial insolvency.
- Chronic fear for the welfare & safety of their family members.
- Clinical depression.
- Post Traumatic Stress Disorder (PTSD).
- Chronic feelings of helplessness and hopelessness regarding safety and welfare.

The family/child psychologist interviewed 35 people in Arizona and New Mexico over a two month period in the summer of 2006. His psychological assessment findings concluded that given the moderate to severe life altering stressors are significant psychological traumatic events that could result in violence, calling for immediate attention by government and elected officials.

B. Family and Community Social Impacts

The direct relationship between job security and family stability is well known empirically[1]. Due to psychological stressors documented by psychological assessment, the loss of livelihoods,

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[1] The greatest social impact is the loss of livelihood, according to empirical social research, is the devastation on the family structure (Blehar 1979, Fagin and Little 1984). The breadwinner is relegated from a position of dignity and worth to low self-esteem (Borrero

compounded with the helplessness / hopelessness of not being able to protect one's family or any possibility of redress, the social stressors on families can include (but are not be limited to):

- Substance abuse.
- Domestic violence.
- Divorce.
- Anti-social behavior in youth, especially in pre-teens and teenagers.

C. Economic Impact Assessment

1. Livestock Impacts from the Mexican Wolf Program

This section highlights past, current and projected livestock damages due to the Mexican wolf depredation. It also highlights the indirect but devastating economic impacts on Catron County government, schools, businesses and family residents.

a. Importance of Livestock Production to Catron County: Cattle ranching are the economic base of Catron County, supporting:

- $4.1 million annually to the local economy.
- $10 to $15 million to the state's economy.
- $517,000 annual support to schools and county government.
- Livestock production support approximately 50% of its tax base.

b. Wolf depredation on Catron County livestock from 2000-2006 has directly resulted in financial damage[2]:

- Cattle losses, 182 cows; total value: $129,764.
- Calf losses, 854 calves; total value: $369,992.

- Total number of Catron County cattle lost to wolf depredation: 1,036.
- Total financial loss to ranchers: 1,036 head of cattle = $499,156.
- Two ranchers already lost their cattle ranches directly due to the wolf.

2. Summary of Livestock Economic Impacts on the County

These financial impacts to ranchers from wolf depredation only represent direct losses to ranching operations[3].

1980). Divorce, crime, suicide, alcohol and family violence (Larson 1984) are social impacts commonly associated with job loss (Brenner 1975).

[2] These estimates are conservative, because the figures are based on market value, not replacement value. The average market price for a bred cow in 2005 was approximately $1,000. The replacement cost for that same bred cow (i.e., the rancher goes to a market, buys a cow, acclimates it to his range conditions and starts breeding) is $2,400, according to Assoc. Professor, Nick Ashcroft, Agricultural Economics Dept., NMSU.

[3] The above impact assessment was conducted using U.S. Department of Agriculture (USDA) cattle prices and the recorded number of cows and calves killed by wolves from 200 through 2006 period. In a separate and independent survey of the ten most impacted ranchers, financial impacts to their ranch operations were found to be similar.

a. The negative economic impacts from these ranchers to the larger community since 2000: The increasing wolf depredation on livestock has a significant impact on county businesses, government and schools, including, but not limited to:

- Impacts to Catron County: Negative $598,987 (using a 1.2 multiplier).
- Impacts to the state of New Mexico: Negative $898,480 (using a 1.8 multiplier).
- Loss of $33,000 to county government and schools.
- Loss of $47,000 to local businesses.
- Negative impact of approximately $900,000 to the New Mexico's economy.

b. These estimated impacts come from eight to ten wolf-impacted ranchers.

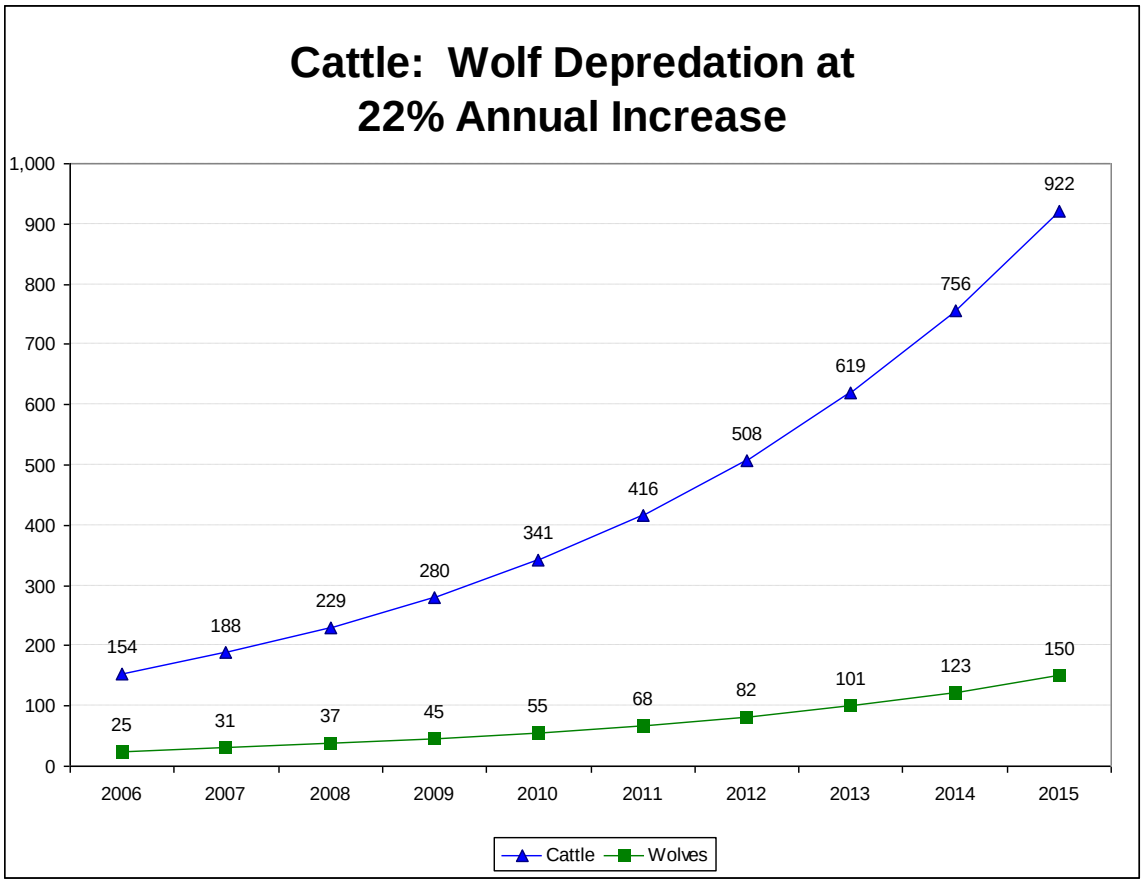
3. Projected Future wolf depredation and its impacts on the County.

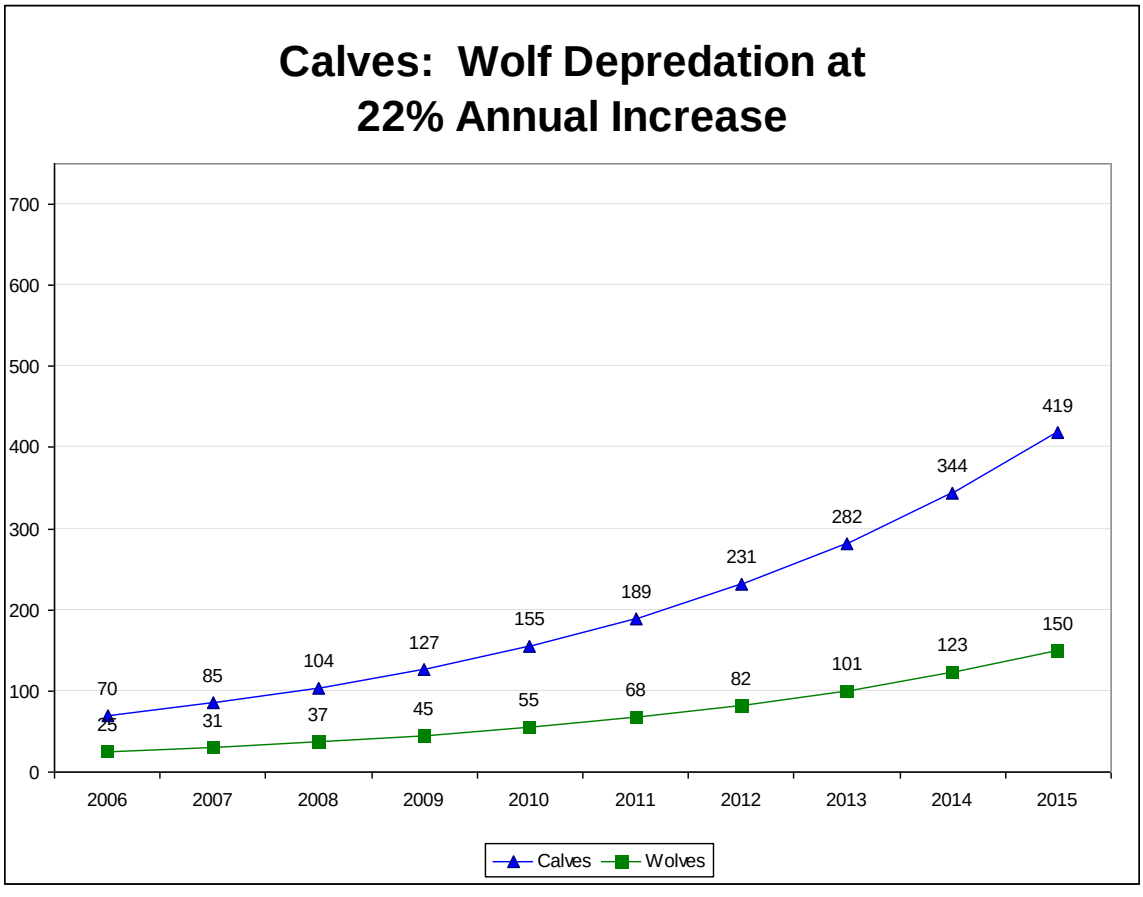
If livestock ranching and its customs and culture are not protected from wolf depredation, viable livestock production will disappear as the County's base industry in the foreseeable future.

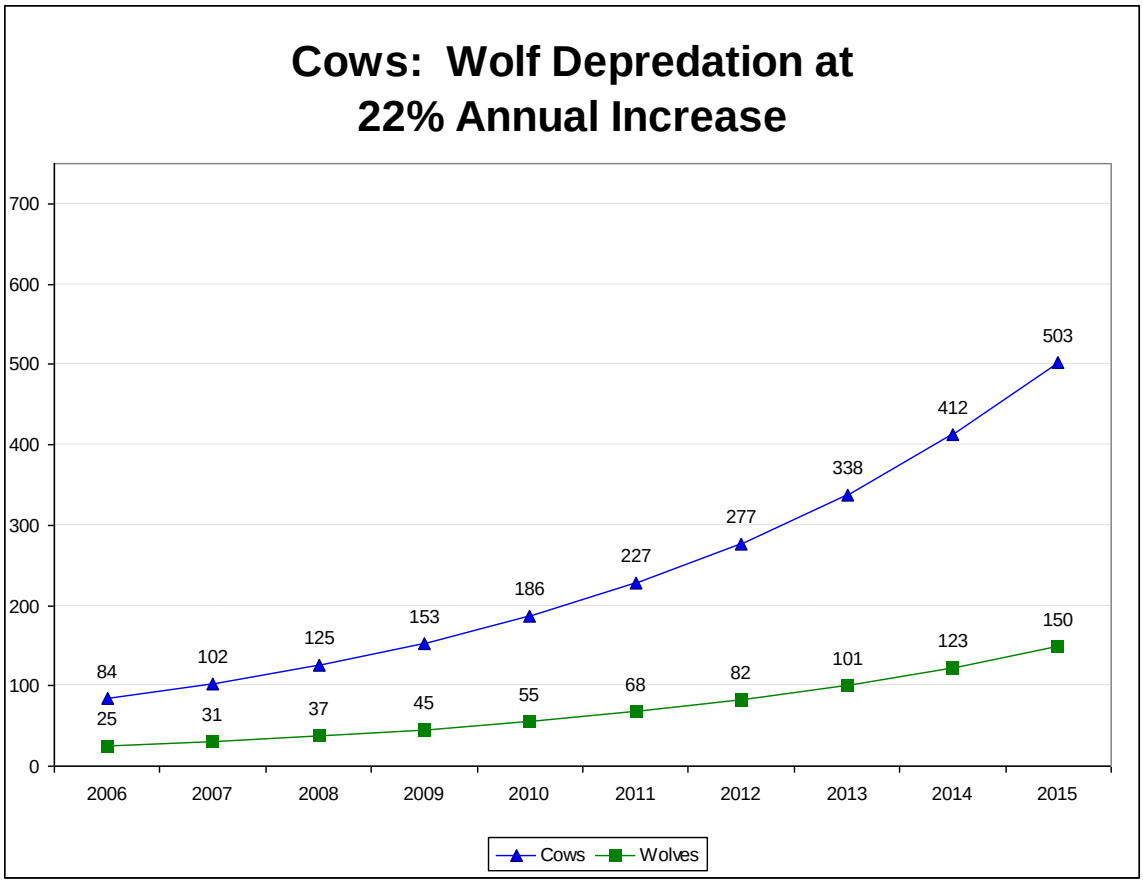
a. Future wolf population impacts on livestock losses: The wolf population continues to explode, up from a conservative estimate of 25 wolves (in Catron County at the end of 2006) to over a hundred in a few short years. The wolf population increase is driven by both continued introduction and by an average litter size of 4 to 8 pups per year. With the continued release of wolves into Catron County, the wolf population will lead to the destruction of the county's economic base. The tables below show the projected annual loss of County cattle livestock over the next 9 years, based on a natural wolf population increase of 22% per year (that does not include any more wolf translocations or releases):

- Livestock losses will jump from 154 in 2006 (mother cows and calves) to.
- 188 calves and mother cows in 2007.
- To an annual loss of 922 cattle in 2015 (419 calves & 503 mother cows).
- Next 5 year total losses would be:
    - 3,000 head of livestock lost to wolf depredation.
    - $1.5 million direct loss to livestock producers.
    - $1.8 million impact to Catron County.
    - $2.7 million impact to the state of New Mexico.

b. Catron County cattle operations will be destroyed in the foreseeable future: The tables, below, only underscore that viable cattle operations will be devastated long before the year 2015. The impact on Catron County fiscal solvency would be at risk with the loss of 50% of its tax base gone, probably within five years given the current rate of wolf depredation on livestock.


Cattle: Wolf Depredation at 22% Annual Increase
1,000
900
800
700
600
500
400
300
200
100
0
154
188
229
280
341
416
508
619
756
922
25
31
37
45
55
68
82
101
123
150
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Cattle
Wolves


Calves: Wolf Depredation at 22% Annual Increase
700
600
500
400
300
200
100
0
70
85
104
127
155
189
231
282
344
419
25
31
37
45
55
68
82
101
123
150
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Calves
Wolves



c. Fiscal Impacts on County Government an Schools: Approximately 50% of the County's tax base is derived from cattle ranching. Two ranchers have already ceased ranching due to wolf depredation. Ten more ranchers could be out of business within the next year. Realtors in Glenwood and Reserve, New Mexico, state that most cattle ranches are for sale because prudent cattle ranch investors will seek to cut their losses before the wolf population grows any larger -- but *the ranches for sale will not be sold as cattle ranches.* Instead, these ranches will likely become residential subdivisions.

d. Future Impacts on Catron County Outfitting and Guide Industry: Catron County is world renowned as the premier place in the U.S. for trophy elk hunting. Outfitters and guides are already reporting observable elk losses that they believe are due to the wolf population increase. Montana[4] has documented experienced the drastic reductions in their elk populations. Local outfitter, Tom Klumker, San Francisco Outfitters, states that Wyoming and Idaho outfitters are experiencing similar observations regarding the devastation of their elk herds due to wolf predation.

Catron County has 24 Outfitting and guides with residence inside the County with another 40 to 50 outfitters/guides dependent upon the County's elk herds for their living. .Another local outfitter in Catron County figures for the New Mexico game unit around Wall Lake, supports roughly 500 elk; 200 elk tags are given out each year but the number of wolves in the same area will devour close to 400 elk in a year. If the wolf population increases like in the northwest, it will destroy this viable local economy, not to mention the loss of the premier elk herd in the US.

D. Cumulative Impacts on Catron County

[4] , Dr. Norma Nickerson, University of MT, states that the wolf predation on elk results in a $238 million annual loss to the state's economy. Source: ww.casperstartribune.com/articles/2007/01/22/news/Wyoming.

Below is a summary of cumulative impacts on Catron County's livestock production and the local economy, social and cultural fabric related to cattle ranching. Refer to Appendix C: *Cumulative Impacts on Catron County*.

1. Cumulative Financial Effects to Family Livestock Ranching

Catron County's major industry is livestock production. Many factors have a bearing on livestock production, including markets and drought; federal actions, drought and predation organizations and networks, have played the greatest havoc on Catron County's economy. Economic opportunity costs to the County include:

- Loss of over 25,000 head of cattle in the last decade.
- Loss of about $600,000 in tax revenues to County government and schools.
- Loss of $10 million annually in livestock production economy since 1997.

2. Cumulative Social Effects

Economic losses due to wolf depredation on livestock have significant and cumulative impacts on Catron County, community stability, livelihoods, customs and cultures, leadership and on county and school programs, services and facilities. Catron County will suffer significant negative cumulative effects contributing to:

- Losses in the number of schoolchildren and school programs.
- Substantial increases in social services and mental health caseloads, especially relating to family stability and related social problems.
- Dramatic increase in unemployment rate and economic social mobility for ethnic minorities.
- Basic services, including, but not limited to emergency and law enforcement, with severe service rate reduction.

A once-prosperous economically vibrant community, Catron County is one of the poorest counties in New Mexico due to the cumulative effects listed above. The poverty level in the county was at 24.5 percent in 2004; ranked eighth. Per capita income was $13,951 in 2003, the most current available statistics for this wolf impact report.

The cumulative impacts from the wolf could result in even lower poverty status, loss of upward mobility, increased drugs, increasing caseloads due to the breakdown in viable jobs leading to community fragmentation. Out-migration of the county's youth is increasing due to the collapse of the ranching sector, displaced by retirees, the predominant newcomers to the 83 residential subdivisions that have already replaced functioning and successful working ranches.

The breakdown of social networks associated with local purchasing, circulating and exchange in trades is already occurring. The two ranchers who just sold their ranches because of the Mexican Wolf program were vital members of their communities. They were active in social activities and in their churches, and held positions of leadership. One rancher had a youth camp, now closed. Another youth camp, Apache Creek, has serious reservations about continuing its national program for inner city youth due to habituating wolves.

The implications to County government services and schools are significant: current residential development already strains the county's fiscal budget. With even more ranches becoming subdivisions, the County will lose:

- Fifty percent of Catron County's tax base. Ranching operations pay half the tax base.
- Elimination of the ten wolf impacted ranches most at risk will result in approximately 70,000 acres being subdivided. Adobe Ranch's owner states that if wolves continue to destroy his cattle investment, his only recourse will be to subdivide his property for residential development.

- This will be a significant cumulative impact to County government and schools with a vast, compounding effect on its austere budget as stresses and demands for services increase.

E. Impacts on the Customs and Cultures of Catron County

1. Cultural Impacts

Culture is defined as the shared beliefs, values & norms: Independence, equality, self-sufficiency, devotion to family, work and land – all giving meaning to kindly neighbors and community activities such as rodeos/jimkhanas and high school sports that bind groups of people into communities and give common purpose and meaning to community life. But these bindings are being fragmented by the presence of wolves and their impacts on rural community values and beliefs with more ranching-based rural communities losing members to distant places due to the grim forecast for continuing with their ranching culture.

2. Customs

Customs are the activities, practices, traditions, and land usage & stewardship. It was discussed earlier how the wolf introduction has significantly restricted social gatherings on the national forest. The customary uses of the national forests for hunting with hound dogs are severely hampered due to the likelihood of wolves attacking expensive hound dogs.

3. Community stability

Community stability entails an environment where people and heir customs and cultures are left to their own democratic means; where every community is the arbitrator of its own survival; where people, subject only to the rule of nature and free markets, are masters of their own destinies. Obviously, community stability depends on the right of people and communities to pursue and protect their customs and culture most essential to their well-being and most suited to their personal visions.

Yet, it is also an obligation placed upon the federal government, by law and regulation. NEPA declares:

*[It is the] …continuing responsibility of fed. government to use all practical means…to…assure for all Americans safe, healthful, productive and aesthetic and **culturally** pleasing surroundings…[and to] preserve important historic, **cultural** and natural aspects of our national heritage.*

With the onslaught of the wolf habituating around human use areas and the depredation of livestock, it could lead to the irreversible & irretrievable destruction of this land based culture (refer to BLM State Standards and Guides EIS). These are the same shared values and beliefs from the ranching communities, referred to as *the Code of the West*:

- Respect for self and others.
- Accept responsibility for your life.
- Be positive and cheerful.
- Be a person of your word.
- Go the distance.
- Be fair in all your dealings.
- Be a good friend and neighbor.

With the cumulative impacts from the wolf, the customs and cultures are at a cross road.

4. NEPA

The National Environmental Policy Act (NEPA) mandates, by law and regulation, certain actions the federal government must take. NEPA declares: *[It is the] … continuing responsibility of federal government to use all practical means … to … assure for all Americans safe, healthful, productive and aesthetic and culturally pleasing surroundings … [and to] preserve important historic, cultural and natural aspects of our national heritage.*

F. Distributional Impacts

Some members of the public, living far from the location of the Mexican wolf program, say they want wolves, but this desire may not place an undue burden on rural communities and individuals. Civil and property rights impacts have been analyzed to determine if there are civil rights implications in compliance with the County Environmental Planning and Review Ordinance. After interviews with many people who have had wolf encounters and loss of protectable interests in property, initial findings have identified the following civil rights and takings implications from these interviews:

1. Takings Implications

a. Loss of personal property: 1,036 head of cattle lost worth $500,000. The Defenders of Wildlife (DOW) total compensation payments for New Mexico and Arizona totaled less than $70,000.

Numerous horses, pets, poultry, and hunting dogs were also killed without fair compensation, often with no compensation at all.

b. Loss of real property: the devaluation of the ranchers' investment-backed expectations was significant for the two ranchers who were forced to sell their ranch.

c. Inadequate compensation: Ten Catron County ranchers have lost a total livestock value of $500,000 since 2000. Yet, Defenders of Wildlife (DOW) total compensation payments for New Mexico and Arizona was less than $70,000. DOW "tolerance" policy states that it will not pay compensation if the person asking for compensation is found to be critical of Defenders of Wildlife.

Trespass upon private property by federal agents was reported by those interviewed.

Taking one's ability to protect or defend personal property: USFWS rule prevents public land ranchers from killing a wolf, or even throwing a rock at wolves caught in the act of killing their cattle. The rancher could lose his forest allotment (which he has paid for) if caught defending his personal property on the national forest.

2. Other Civil rights implications

a. Due Process: The USFWS and the Mexican Wolf Adaptive Management Oversight Committee's early notice public policy was not honored by USFWS or the interagency field team. Those interviewed stated that agency staff often identify wolf locations that are old, inaccurate, or both.

Improper or social justice assessments were made, ostensibly to determine if the wolf program adversely affected protected classes of people and business owners. Most of these ranches fall under the protected classes of the Presidential Executive Order 12898 **http://www.ejnet.org/ej/execorder.html** on Environmental Justice requirements, because they are either owned by an ethnic minority or by a woman rancher. There was apparently no intention

of complying with these civil rights requirements – to assess the effects of their federal program on these protected classes – because no such assessment was ever conducted.

b. Federal Rights Protections: USFWS appears to be out of compliance, in varying degree, with the following rights protections federal statutes, regulations and Presidential Executive Orders:

- Civil rights protection under 18 U.S.C. 241 & 245(a)(1) & 1964 Civil Rights Act Title VII)
- The purpose of the Civil Rights Act ... is to protect the citizens of the U.S. from acts which injure, oppress, threaten, or intimidate any citizen in the free exercise or enjoyment of any right or privilege secured by the Constitution or laws of the United States. (18 USC §241).
- Takings Implication Assessment, Presidential Executive Order 1263: The Regional Director of the USFWS rejected two takings implication requests by adversely impacted ranchers. The USFWS regional director stated that under the 1997 EIS projection there would not be any takings implications. The two ranchers who asked for a takings implication assessment in February 2006 were the two ranchers who eventually had to sell their cattle ranches in the fall of 2006 due to the high level of wolf depredation on their livestock.
- Environmental Justice, Presidential Executive Order 12898.
- Regulatory impact analysis, Presidential Executive Order 12866 http://www.epa.gov/fedrgstr/eo/eo12866.htm.
- Small Business Regulatory Enforcement Fairness Act of 1996.
- Regulatory Flexibility Act (5 U.S.C. 603 & 604) and Executive Order 13272 http://sba.gov/advo/laws/eo13272.pdf of August 13, 2002: Proper Consideration of Small Entities in Agency Rulemaking to promote compliance with the Regulatory Flexibility Act, as amended (5 U.S.C. 601 et seq.) (Executive Order 12291), The *Federal Register (*Vol. 57, No. 182 (September 18, 1992), page 43186) identifies three criteria required when conducting regulatory impacts.

  (1) When a project is more than $100 million; or,

  (2) A major increase in costs or prices for...individual industries...or local governmental agencies, or geographic regions; or,

  (3) Significant adverse effect on competition, employment, investment, productivity, innovation. http://www.archives.gov/federal-register/codification/executive-order/12291.html §1(2) & (3) y Executive Order 12291 regarding environmental analysis and documentation is applicable to forest users, including lessees and permittees. Executive Order 12291 specifically outlines "...the Regulatory Impact Analysis...may be combined with any Regulatory Flexibility Analysis performed under 5 USC §603 and 604." Most forest permit holders and leasees are small businesses.

- President Bush's Executive Order 13352 http://www.ofee.gov/eo13352.pdf *Facilitation of Cooperative Conservation*
- Sociocultural assessment, 36 CFR §219.7(c)(4), §221.3(a)(3)
- Cumulative effects analysis, 40 CFR §1508.7
- Mitigation measures, plans or monitoring, 40 CFR §1508.20

3. Equal Protection Under The Law

There is no redress or recourse for people who have lost their private property. There is no defense, protection or recourse for families, parents or children for a safe and secure home, resulting in moderate to severe psychological damage that has already occurred and is documented.

It appears that those most adversely affected by Mexican wolf introduction have been and are being denied equal access to justice.

“Equal Protection Under the Law” is codified in the Civil Rights Act, 42 U.S.C. Section 1983: *Protect citizens of the United States from acts, which deprive them from enjoying their constitutionally protected rights privileges and immunities. Should such deprivation occur, such an offender shall be liable to the injured party in a suite in equity, or in action in law.*

The Civil Rights Act, 42, USC §1983, exists to protect citizens from acts that deprive them from enjoying their constitutionally protected rights, privileges, and immunities. Defenders of Wildlife, however, take the position that its funding of livestock losses is only a gift because public land ranching is only a privilege. The USFWS tacitly supports this compensation program. The U.S. Forest Service official policy also appears to be out of compliance with this civil rights law that states that privileges of livestock grazing, as personal property, are entitled to equal protection under the law.

The professional psychologist assessment report finds that with no hope, no way to defend family members or protect lifelong investment and livelihoods, nor any recourse, the family head of household will remain helpless and have a real possibility for violence.

This statement and significant impacts on the health, safety, psychological trauma, economic, social and cultures of rural communities and people is in juxtaposition to a federal policy consisting of rigid rules and penalties for a *non-essential, experimental wolf population* that by definition is not a threatened or endangered species under the Endangered Species Act.

III. Mitigation Plans

A. Mitigation Planning

1. Environmental Planning and Review Ordinance

Catron County's Environmental Planning and Review Ordinance states that "public agencies (local, state, and federal) should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would lessen or reduce the significant social, cultural, property rights, and economic impacts on the citizens of Catron County." Before Dr. Benjamin Tuggle, Regional Director of the USFWS, finalizes the decision on the USFWS Five-Year Review, the significant adverse impacts as detailed in the County's *Initial Environmental Assessment Report* must be mitigated.

2. Choices

There are choices for solving the problems caused by some large predators, including but not limited to Mexican wolves, which are habituated and bred in captivity and then released in proximity to places where people live and work.

One choice is lethal take of problem wolves instead of removing problem wolves to captive breeding programs where their DNA is concentrated; creating what might be viewed as premeditated release of problem wolves.

Another choice is permanent removal of problem wolves to locations where they may be viewed by the public and where those wishing a more personal experience with wolves will be afforded such. Remote areas with ranching custom and culture are not the correct place for problem wolves. Rural areas where people have ranched in a successful, multi-generational manner are not expeditious places for problem wolves.

A third choice is the institution of a "one strike" policy (rather than the current "three strikes" policy), which mandates lethal take for problem, habituated wolves.

All government agencies involved in the wolf program have these choices at their disposal, as well as other choices. The USFWS program to continue captive breeding and introduction of these large predators has failed from an "environmentally friendly" viewpoint. Raising large predators in captivity, habituating them and dovetailing problem wolves back into such breeding programs, is something akin to "job security" for those in charge of the Mexican Wolf Program. This is not what the Endangered Species Act mandated, nor should the program be one of endless abuse and harassment of people, their custom and culture. If wild wolves can survive and coexist with the inhabitants of Catron County, fine, but wild wolves are not what are being released in Catron County.

B. Establish Protective Measures for Human Safety and Health

1. Health and safety Issue

Health and safety is a major issue. With wolf incidents continuing and increasing in frequency, there is a proven need to get effective protective measures in place as soon as possible in Catron County. It is of paramount importance to provide psychological counseling and assistance for people and families that have already suffered severe adverse effects in the form of psychological trauma.

The risk to human health, safety and welfare increases in direct proportion to habituated, problem wolf incidents. Disproportionate social and economic impacts occurring due to the Mexican wolf program are negatively impacting Catron County's rural communities and family ranches.

Rural families regularly express fear about wolves that fearlessly and brazenly approach their homes and families. Families' fear that wolves will continue habituating around human settlements, without the ability to protect family, children, pets and other domestic animals, is both reasonable and warranted.

2. Government Response to Human Wolf Encounters and Risks to Health & Safety

The Catron County Commission will establish a regional task force consisting of representatives from Wildlife Services, the U.S. Department of Agriculture, and elected officials from wolf impacted counties. This task force will develop improved response, investigation, mediation and protective measures along with securing the financial resources to protect lives and property.

a. Catron County's declared state of emergency includes developing an emergency response plan. This plan will be based on the formal agreement between Catron County and Wildlife Services, with a major emphasis on responding to and reducing wolf human interactions. It will also contain a component which will directly address wolf depredation.

In terms of emergency response, Catron County is pursuing disaster relief funds. It is working with Wildlife Services, the New Mexico Department of Agriculture and the USDA Farm Service Agency.

b. Of immediate importance is full, accurate and timely disclosure of wolf locations and movements which are critical to successfully reduce wolf encounters with children, human settlements and depredation on livestock. Protective measures with full force and effect are essential to provide adequate protection. The following are crucial:

(i) Pursuant to the Catron County Commission's Emergency Declaration, assist in this effort with special attention to human health and safety issues.

(ii) Support Catron County, USFWS, and USDA efforts to reduce human-wolf incidents and reduce habituating wolves.

(iii) Provide timely information to Catron County Commission, communities and households regarding wolf location and movement. This full disclosure in real time (accurate and current information) is critical to successfully reduce wolf encounters with children, families and human settlements.

(iv) Promptly provide incidental take permits for habituating wolf/wolves that appear and threaten people and their domestic animals.

(v) Support USDA Wildlife Services to help provide a minimum of two full-time Mexican wolf specialists to respond to wolf-human interactions and wolf depredation on livestock. Wildlife Services is currently using financial and human resources from other program areas to support the Mexican wolf recovery program. This redirection of resources has negatively impacted ranchers, farmers, and businesses outside the Mexican wolf recovery area.

C. Reduce Wolf Depredation on Livestock

To effectively mitigate current and future significant wolf depredation on livestock must require USFWS to take immediate action due to the County's disaster declaration. Therefore, Catron County Commission recommends that the Regional Director, Dr. Benjamin Tuggle, consider the following mitigation recommendations that are related to his three-point wolf-livestock concept proposal.

1. Restitution of Expenses

Restitution for disproportionate and additional expenses due to the presence of wolves on ranches and loss of private property related to wolf depredation. Ranchers must not be expected to tolerate the economic devastation that comes with habituated wolves. We support no less than effective measures that keep Catron County ranchers economically viable. It is hereby understood that this is a short-term solution,

allowing impacted ranches to remain viable until wolves on the landscape become wild or the program is declared a failure and abandoned.

a. Immediate relief measures:

(i) Provide full disclosure that is accurate, real-time information on wolf locations and movements

(ii) Provide ranchers with the latest technology in wolf tracking for locating wolves.

(iii) Provide ranchers with proven and effective non-lethal ways to shoot at wolves in an attempt to haze wolves from livestock.

b. Future remedies:

(i) Collar all wolves with GPS technology

(ii) Provide the most adversely impacted individuals with the choice of which interdiction tools and methods will best work for their specific operation and management.

(iii) Changes in the non-essential, experimental wolf program procedures will provide effective relief from the undue burden placed on ranchers. Key changes include:

Cease translocating problem wolves from Arizona to Catron County, New Mexico.

The 3-strike rule is unfair since the rancher loses private, personal property with the loss of one domestic animal to wolf depredation. The 3-strike rule should also include injuries; i.e., when a wolf/wolves injure or kill a domestic animal, the wolf should be removed or destroyed.

The current procedures allow depredating wolves a clean slate after 365 days. This should be stopped simply because the depredating wolf/wolves will continue to kill and injure livestock.

A “depredation” is currently all depredations that occur within a 24-hour period. This is neither accurate nor equitable. One loss of livestock or pet should be counted as one depredation.

If non-lethal methods prove ineffective, USFWS should provide lethal take to public land ranchers due to the fact that the wolf is a non-essential, experiment population, not an endangered species, and due to the fact that livestock is personal property, owned by the rancher, who has a right to protect his or her property.

These wolf program procedural changes will all result in effectively keeping the ranchers on the landscape by changing the wolf program standard procedures. It is the position of Catron County that problem wolves are unsuitable for continued inclusion in the Mexican gray wolf reintroduction project or continued existence within Catron County.

An effective way to deal with “problem” wolves is to consider Catron County Commission’s *Proposed Wolf Conservation Area: A Mitigation and Recovery Plan for “Problem” Wolves from the Mexican Wolf Program.*

Suggested areas include:

Federal Areas in New Mexico to relocate problem wolves include White Sands Missile Range (New Mexico), Sevilleta National Wildlife Refuge, and Big Bend National Park

Wolf Conservation Area in or adjacent to Catron County, using federal and/or state land exchanges and acquisitions for Problem Wolves

Potential privately owned areas to relocate problem wolves: Voluntary Safe Harbor Agreements could be arranged between the USFWS and appropriate and willing nonfederal landowners. A few suggested willing participants include The Turner Endangered Species Fund (TESF), which manages the Ladder and Armendaris ranches. The Wolfsong Ranch Foundation at Rodeo, New Mexico, cares for purebred wolves

and wolf hybrids. The Wild Spirit Wolf Sanctuary at Ramah, New Mexico, takes in and cares for wolf hybrids. The Nature Conservancy (TNC) lands in the Bootheel of New Mexico (Hidalgo County), and the Arizona Strip country near the Grand Canyon are also suitable locations.

2. Incentives Proposal

We recommend keeping incentives as simple as possible, and aimed directly to ranchers: Financial assistance to offset changing and increasing costs of livestock management. Ranchers are already changing their livestock management practices to reduce the wolf depredation at significant expense to the ranchers. Ranchers should not be forced to bear these undue costs alone.

Our recommendation is for USFWS to provide funds to ranchers to offset the added costs of ranching that are due to wolves. These funds would be used to assist ranchers to provide the manpower to get between their livestock and wolves; for other livestock management changes due to wolf presence; help in range improvements; increased predation from other predators; and other efforts to reduce overall predation on livestock.

3. Compensation Proposal

Reimbursement or restitution would be based on past losses to personal property (livestock, other domestic animals; and to real property) and real estate and investment-backed expectations. For compensation claims to be considered, the persons submitting the claim should provide evidence as to the losses they have incurred.

a. Fair Compensation Formula: For livestock producers, potential losses should be based on the percentage change of historical livestock records considered on an individual basis and on the historical records and evidence provided by the individual rancher. For example, if a rancher's calf crop was historically 90% (prior to the presence of wolves), and the rancher found that his calf crop has dropped to 85% (since the presence of wolves), the compensation would be for the 5% difference. The same formula would apply to adult cattle lost.

This compensation program would not be limited to ranchers; it would also be open to landowners, outfitters, or anyone with a private property (personal or real) loss due to wolves.

b. Compensation Claims Boards: Local claims boards would be established within each affected county. The local claims board would include only financially affected individuals (ranchers, other affected property owners, pet owners, and people who run hound dogs). Each claim would be presented with evidence regarding the loss of personal or real private property interests to the claims board for consideration and approval; see above recommendations.

If individuals on the board have submitted a claim they would not be allowed to vote on their own claim. The local claims board should receive per-diem for their time and involvement on the local claims board. The board would change on a regular basis (6 members, 3 rotating off each year).

c. Compensation Oversight Board: This board will consist of county supervisors and commissioners from wolf-impacted counties and the chairmen from each local boards. This board would provide oversight and the allocating of funds and proportioning of funds (if the case arises that there is not enough funding to pay all approved claims). In consultation with the Super Board, described below, the oversight board will establish safe guards for fiscal accountability and guidelines for the local boards as well as the development of an appeals process. Appeals by individuals from the claims boards would be through the oversight board.

d. The Super Board: This board would consist of U.S. Fish & Wildlife Service and the U.S. Wildlife Services. It would be advisory only.

4. Funding for compensation and incentives

As a start-up, initial funds would be pursued through line item budgeting in the USFWS and through Congressional appropriation: $10,800,000 ($10 million to endowment, $800,000 to begin immediate compensation and incentives) for both Arizona and New Mexico. Any other monetary contributions to the fund should be accepted as long as there are no strings attached.

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Appendix A: Definitions

Adverse Effect (Cultural Resources) – Alteration of the characteristics which contribute to the use(s) determine appropriate for a cultural resource or which qualify a cultural resource property for the National Register of Historic Places to such a degree that the appropriate use(s) are reduced or precluded, or the cultural property is disqualified from National Register of Historic Places eligibility. Criteria in the regulations of the Advisory Council on Historic Preservation (36 CFR Part 800) guide the process for making the determination of effect. – BLM Adverse Effects (Heritage Resources) – Any effect on a heritage resource that would be considered harmful to those characteristics that qualify the property for inclusion in the National Register of Historic Places. – National Grassland Plan (USDA Forest Service) http://www.fs.fed.us/ngp/draft/plan/pdf_plan_draft/Dakota_Prairie_Plan/Appendices/appendix_g.pdf.

Adaptive Management – [Excerpt] "The Mexican Wolf Reintroduction Project is a cooperative effort administered by *six co-lead agencies*: Arizona Game and Fish Department, New Mexico Department of Game and Fish, White Mountain Apache Tribe, USDA Wildlife Services, USDA Forest Service, and U.S. Fish and Wildlife Service. These agencies function as an Adaptive Management Oversight Committee (AMOC), chaired by Arizona Game and Fish. This management approach provides opportunities for participation by local governments, nongovernmental organizations, and individuals from all segments of the public. AMOC developed Standard Operating Procedures (SOPs) for the Reintroduction Project in 2004-2005, to provide more consistent guidance for management actions on the ground. SOPs are created or updated as necessary to improve Project management (see SOP 0.0, Overview). The current versions of these SOPs are available from this website (see Downloads, to the right). The Directors from the six lead agencies that comprise the AMOC have heard several concerns and complaints repeated expressed by the public regarding the field activities carried out by the Mexican Wolf Interagency Field Team (IFT). The Directors instructed AMOC to investigate the claims. ... AMOC's responses to the more common and/or important issues:" Mexican Wolf Conservation and Management http://www.azgfd.gov/w_c/es/wolf_reintroduction.shtml Other definitions of Adaptive Management (of interest due to the various differences between federal agencies, and even between different offices/regions of the same federal agency): Formalizes a monitoring process and provides for redirection of projects and programs based on new information. Adaptive management may be carried out according to the following steps: participants determine measurable goals for management and then: (1) outline their understanding of system functions and outputs, (2) establish quantified objectives and controls, (3) initiate the action, (4) monitor and evaluate the outcomes, (5) review goals and objectives, and (6) redirect the action, if necessary. An adaptive management program is developed in coordination and collaboration with other governmental agencies, stakeholders, and interest groups, as appropriate. – U.S. Bureau of Reclamation Glossary http://www.usbr.gov/uc/envdocs/eis/navajo/pdfs/deis_glossary.pdf 2. The rigorous application of management, research, and monitoring to gain information and experience necessary to assess and modify management activities; a process that uses feedback from refuge research and monitoring and evaluation of management actions to support or modify objectives and strategies at all planning levels. – U.S. Fish & Wildlife Service Manual, Refuge Planning Overview http://www.fws.gov/policy/602fw1.html 3. The process of implementing flexible management and policy that is responsive to results of continuous biological monitoring and scientific experimentation. – DOI/USFWS http://rcwrecovery.fws.gov/finalrecoveryplan.pdf 4. A type of natural resource management in which decisions are made as part of an ongoing science-based process. Adaptive management involves testing, monitoring, and evaluating applied strategies, and incorporating new knowledge into management approaches that are based on scientific

findings and the needs of society. Results are used to modify management policy, strategies, and practices. National Grassland Plan (USDA Forest Service) http://www.fs.fed.us/ngp/draft/plan/pdf_plan_draft/Dakota_Prairie_Plan/Appendices/appendix_g.pdf 5. The process of implementing policy decisions as scientifically driven management experiments that test predictions and assumptions in management plans, and using the resulting information to improve the plans. – The Forest Ecosystem Management Assessment Team (FEMAT) http://pnwin.nbii.gov/nwfp/FEMAT/ Chapter 9 Glossary http://pnwin.nbii.gov/nwfp/FEMAT/Chapter_9.htm 6. The systematic process for continually improving management policies and practices by learning from the outcomes of operational programs. Its most effective form, "active" adaptive management, employs management programs that are designed to experimentally compare selected policies or practices, by implementing management actions explicitly designed to generate information useful for evaluating alternative hypotheses about the system being managed. – (DOI/NPS) Long-Term Monitoring Plan – National Capital Region Network, September 30, 2005. Submitted by: Inventory and Monitoring Program, National Capital Region Network, Center for Urban Ecology, 4598 MacArthur Boulevard NW, Washington, D.C. 20007. http://science.nature.nps.gov/im/monitor/plans/NCRN_MonitoringPlan.pdf (Pages G-1 through G-8 - Glossary – or pages 150 through 156 of 156 pages) 7. A type of natural resource management that implies making decisions as part of an on-going process. Monitoring the results of actions will provide a flow of information that may indicate the need to change a course of action. Scientific findings and the needs of society may also indicate the need to adapt resource management to new information. – “What Do You Mean By That? Ever wonder about the meaning of Ecosystem Management (EM) and all the unfamiliar terms associated with it? If so, this is the page for you. We provide you with a dynamic list of EM terms and intend to add terms to it as appropriate and upon request. You can help us with our glossary construction by letting us know what terms you'd like defined. Please submit suggestions to Janie Canton-Thompson jcantonthompson@fs.fed.us or 406-542-4150 (Disclaimer – Definitional terms sometimes vary slightly, depending on who is using them and for what purpose. Terms defined here are intended for the general interest reader and will usually suffice for most EM uses.) – Bitterroot Ecosystem Management Research Project Glossary http://www.fs.fed.us/rm/ecopartner/bemrp_glossary.shtml 8. A systematic process for continually improving management policies and practices by learning, through monitoring and evaluation, of the outcomes of actions over time. – McGregor Range Draft Resource Management Plan Amendment and Environmental Impact Statement, Prepared for United States Department of the Interior Bureau of Land Management, Las Cruces (New Mexico) Field Office, January 2005. http://www.nm.blm.gov/lcfo/mcgregor/docs/Draft%20RMPA_EIS_01_05_low.pdf (DOI/BLM) Glossary (Pages 259-268 of 282) 9. Refers to a process in which policy decisions are implemented within a framework of scientifically driven experiments to test predictions and assumptions inherent in management plan. Analysis of results helps managers determine whether current management should continue as is or whether it should be modified to achieve desired conditions. http://pacific.fws.gov/planning/LPOccp/v2.pdf 10. A process that allows the development of a plan when some degree of biological and socioeconomic uncertainty exists. It requires a continual learning process, a reiterative evaluation of goals and approaches, and redirection based on an increased information base and changing public expectations. – Yosemite National Park, Merced Wild and Scenic River Revised Comprehensive Management Plan and Supplemental Environmental Impact Statement (SEIS) Chapter VIII: Glossary http://www.nps.gov/yose/planning/mrp/html/14_rmrp_ch8.htm 11. Adaptive management is based upon the premise that managed natural systems are complex and unpredictable. While there are numerous definitions of adaptive management, most include adaptive management is the process of adjusting management actions and/or directions as new and better information emerges about

the ecosystem. – USFWS, Ecosystem Conservation in Region 3: Glossary of Ecosystem-Related Terms http://www.fws.gov/midwest/EcosystemConservation/glossary.html.

Adaptive management areas – Landscape units designated for development and testing of technical and social approaches to achieving desired ecological, economic, and other social objectives. – The Forest Ecosystem Management Assessment Team (FEMAT) http://pnwin.nbii.gov/nwfp/FEMAT/ Chapter 9 Glossary http://pnwin.nbii.gov/nwfp/FEMAT/Chapter_9.htm.

Affected person – Affected person means an individual or entity that uses, benefits from, or is harmed by the disseminated information at issue. – National Marine Fisheries Service Policy Directive 04-108, December 30, 2005, Policy on the Data Quality Act, Definitions (page 20 of 23 pages) http://reefshark.nmfs.noaa.gov/f/pds/publicsite/documents/policies/04-108.pdf.

AMOC – The Mexican Wolf Adaptive Management Oversight Committee http://www.azgfd.gov/w_c/es/wolf_reintroduction.shtml .

BRWRA – The Blue Range Wolf Recovery Area http://www.azgfd.gov/w_c/es/wolf_reintroduction.shtml.

Burden of Proof (regarding the 'No Surprises' policy, [which] provides certainty for private landowners in ESA Habitat Conservation Planning) – [U.S. Fish and Wildlife Service / USFWS] FWS and [the National Marine Fisheries Service] NMFS shall have the burden of demonstrating that such extraordinary circumstances exist, using the best scientific and commercial data available. Their findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of the affected species. – Habitat Conservation Planning and Incidental Take Permit Processing Handbook, November 4, 1996 (U.S. Department of the Interior Fish and Wildlife Service, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service) http://training.fws.gov/EC/Resources/ES_Listing_and_Candidate_Assessment/ESA%20Folder/hcpbook.pdf (pages 3-29 and 3-31 of 128).

Categorical Exclusion – As described under the National Environmental Policy Act, these are a category of federal actions that do not individually or cumulatively have a significant effect on the human environment, which therefore neither an Environmental Assessment nor an Environmental Impact Statement is required. The Council on Environmental Quality NEPA Regulations gives federal agencies the authority and discretion to determine which of their own activities should be categorically excluded from NEPA. The types of activities that can be categorically excluded vary between agencies. (The NEPA Handbook) – Yosemite National Park, Merced Wild and Scenic River Revised Comprehensive Management Plan and Supplemental Environmental Impact Statement (SEIS) Chapter VIII: Glossary http://www.nps.gov/yose/planning/mrp/html/14_rmrp_ch8.htm.

Collaborate – To cooperate, usually willingly, with an enemy nation, especially with an enemy occupying one's country. – The Random House College Dictionary, 1980 Revised Edition, page 263. (Note: Please consider when seeing this word in plans, agency documents, etc., and carefully consider its meaning.)

Collaborative conservation – A phrase often used by USFWS, but one that is never defined.

Community Stability – The capacity of a community to absorb and cope with change without major hardship to institutions or groups within the community. – Appendix H (Biological Assessment and Evaluation for Revised Land and Resource Management Plans and Associated Oil and Gas Leasing Decisions) http://www.fs.fed.us/ngp/final/pdf_feis/Appendix_H.pdf.

Cooperative conservation – The term "cooperative conservation" means actions that relate to use, enhancement, and enjoyment of natural resources, protection of the environment, or both, and that involve collaborative activity among Federal, State, local, and tribal governments, private for-profit and nonprofit institutions, other nongovernmental entities and individuals. G.W. Bush's Executive Order dated August 24, 2004: Facilitation of Cooperative Conservation. http://www.whitehouse.gov/news/releases/2004/08/20040826-11.html.

Culture – That complex whole that includes knowledge, belief, art, morals, customs, and any other capabilities and habitats peculiar to a society. – Appendix H (Biological Assessment and Evaluation for Revised Land and Resource Management Plans and Associated Oil and Gas Leasing Decisions) http://www.fs.fed.us/ngp/final/pdf_feis/Appendix_H.pdf.

Cumulative Effects – The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions. Cumulative impacts are evaluated as part of the EIS, and may include consideration of additive or interactive effects regardless of what agency or person undertakes the other actions. – McGregor Range Draft Resource Management Plan Amendment and Environmental Impact Statement, Prepared for United States Department of the Interior Bureau of Land Management, Las Cruces (New Mexico) Field Office, January 2005. http://www.nm.blm.gov/lcfo/mcgregor/docs/Draft%20RMPA_EIS_01_05_low.pdf (DOI/BLM) Glossary (Pages 259-268 of 282).

Custom and usage – A usage or practice of the people, which, by common adoption and acquiescence, and by long and unvarying habit, has become compulsory, and has acquired the force of a law with respect to the place. – NOAA Coastal Services Center (CSC) Public Trust Doctrine Glossary http://www.csc.noaa.gov/ptd/glossary.htm.

Depredation – Damage inflicted upon agricultural crops or ornamental plants by wildlife. http://pacific.fws.gov/planning/LPOccp/v2.pdf 2. Incident where livestock or guarding animals are injured or killed. – Montana Fish, Wildlife & Parks Wolf Final Environmental Impact Statement

http://fwp.mt.gov/fwppaperapps/wildthings/wolf/finaleis/glossary.pdf (page 2/166 of 6/170 pages) Note: This website address is only accessible through its cached Google version: http://www.google.com/search?q=cache:IW3xa70bcgEJ:fwp.mt.gov/fwppaperapps/wildthings/wolf/finaleis/glossary.pdf+glossary+%22problem+wolf%22+site:.gov&hl=en&gl=us&ct=clnk&cd=1&lr=lang_en.

Distribution (of the Mexican Wolf) – *Ongoing but unpublished* genetics work *suggests* broad historical distribution, from Mexico D.F. [Distrito Federal, i.e., Mexico City] and Michoacan north through Durango, Chihuahua, and Sonora into Arizona and New Mexico to Utah, Colorado, west Texas, Oklahoma, and Kansas. Broad overlap with other gray wolf subspecies exterminated by the early 1900s. Extirpated from United States by mid-1900s, and most of Mexico soon thereafter. Possibly persists in Mexico and along United States-Mexico border, but none confirmed for decades. About 50 to 60 along Arizona-New Mexico border now, due to releases beginning in 1998, and more than 200 in various captive breeding facilities in the United States and Mexico. http://www.azgfd.gov/w_c/es/wolf_reintroduction.shtml.

Emergency – Absent a Presidentially declared emergency, any incident(s), human-caused or natural, that requires responsive action to protect life or property. Under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, an emergency means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States. – Federal

Emergency Management Agency National Incident Management Capability Assessment Support Tool Glossary http://www.fema.gov/nimcast/Glossary.do;jsessionid=B4AC786E5F6316D5DA660BAD57D2CD52.

Environmental Impact Statement (EIS) – An analytical document that portrays potential impacts on the human environment of a particular course of action and its possible alternatives. Required by the National Environmental Policy Act (NEPA), an EIS is prepared for use by decision makers to weight the environmental consequences of a potential decision. – BLM Rangeland Program Glossary http://www.nv.blm.gov/range/Glossary.htm.

Habituation – Readily visible in close proximity to people or structures on a regular basis; not threatened by close proximity and may even be attracted to human presence or human food sources; extremely rare behavior in wild wolves, but typical behavior for released captive wolf or wolf-dog hybrid; for wolves, may or may not involve food conditioning. – Montana Fish, Wildlife & Parks Wolf Final Environmental Impact Statement http://fwp.mt.gov/fwppaperapps/wildthings/wolf/finaleis/glossary.pdf (page 2/166 of 6/170 pages) Note: This website address is only accessible through its cached Google version: http://www.google.com/search?q=cache:IW3xa70bcgEJ:fwp.mt.gov/fwppaperapps/wildthings/wolf/finaleis/glossary.pdf+glossary+%22problem+wolf%22+site:.gov&hl=en&gl=us&ct=clnk&cd=1&lr=lang_en.

Human Environment – Includes the natural and physical environment and the relationship of people within that environment. – Appendix H (Biological Assessment and Evaluation for Revised Land and Resource Management Plans and Associated Oil and Gas Leasing Decisions) http://www.fs.fed.us/ngp/final/pdf_feis/Appendix_H.pdf.

Human exposure evaluation – A component of risk assessment that involves describing the nature and size of the population exposed to a substance and the magnitude and duration of their exposure. The evaluation could concern past exposures, current exposures, or anticipated exposures. http://www.epa.gov/ogwdw/pubs/gloss2.html.

Human health risk – The likelihood (or probability) that a given exposure or series of exposures may have or will damage the health of individuals experiencing the exposures. http://www.epa.gov/ogwdw/pubs/gloss2.html.

Irretrievable Impact – Commitment of a resource would be considered “irretrievable” when the project would directly eliminate the resource, its productivity, and/or its utility for the life of the project. – Bureau of Land Management "This glossary defines terms used by the Forest Service and Bureau of Land Management to explain natural resource concepts and management activities specific to this final environmental impact statement and proposed plan amendment." http://www.mt.blm.gov/ea/ohv/Glossary.pdf (Page 3/195 of 7 pages; 68 KB) 2. The commitment of a resource would be “irreversible” if the project started a “process” (chemical, biological, and/or physical) that could not be stopped. As a result, the resource or its productivity, and/or its utility would be consumed, committed, or lost forever. – Bureau of Land Management "This glossary defines terms used by the Forest Service and Bureau of Land Management to explain natural resource concepts and management activities specific to this final environmental impact statement and proposed plan amendment." http://www.mt.blm.gov/ea/ohv/Glossary.pdf (Page 3/195 of 7 pages; 68 KB).

Management needs (of the Mexican wolf) – The Mexican wolf is an endangered-species rarity. Its major needs are not habitat management/restoration. Reintroduced wolves show very clearly what is needed to achieve recovery: education to prevent people from mistaking wolves as

coyotes and shooting them; heightened law enforcement to investigate mortalities more effectively, and to pursue legal actions against those who intentionally but unlawfully kill wolves; greater driver caution to reduce road-kills of wolves taking advantage of roads as travel corridors; and adequate funding to manage wolves, including conducting research, monitoring, public outreach, prevention of and response to depredation incidents, and field surveys to determine and monitor presence of wild individuals, and to evaluate potential reintroduction or re-occupation sites for habitat capabilities, prey base, and potential conflicts. http://www.azgfd.gov/w_c/es/wolf_reintroduction.shtml.

NBII – The National Biological Information Infrastructure http://www.nbii.gov.

NEPA Process – All measures necessary for compliance with the National Environmental Policy Act of 1969 (see 40 CFR 1508.21) (BLM 2003). – Draft Environmental Impact Statement, Pit 14 Coal Lease-by-Application, DOI/BLM http://www.wy.blm.gov/nepa/rsfodocs/pit14/DEIS/09chap5-ref-glos.pdf (pages 15-18 of 18).

Non-Essential Experimental Population – A reintroduced population believed not to be essential for the survival of the species, but important for its full recovery and eventual removal from the endangered and threatened list. These populations are treated as "threatened" species, except that the ESA's Section 7 consultation regulations that require Federal agencies to consult with the U.S. Fish and Wildlife Service to reduce adverse impacts from Federal actions do not apply, except where the species occurs within National Parks or National Wildlife Refuges. Also, critical habitat cannot be designated in these areas. (For more information on Experimental Populations, see the fact sheet entitled “Little-Known But Important Features of the Endangered Species Act.” – http://www.fws.gov/midwest/wolf/esa-status/esa-features.pdf 2 pages; 127 KB) – USFWS Midwest Region, Gray Wolf Recovery, Glossary (undated) http://www.fws.gov/midwest/wolf/recovery/namerica.htm.

The Precautionary Principle – [T]he principle of precautionary action, which has evolved over the past 10 years, features four major parts. First, we have a duty to take anticipatory action to prevent harm; if we have a reasonable suspicion that something bad might happen, we have an obligation to try to stop it. Second, the burden of proof of harmlessness of a new technology, process, activity, or chemical lies with the proponents, not with the public. Third, before using a new technology, process, or chemical, or before starting a new activity, we have an obligation to examine “a full range of alternatives,” including the alternative of doing nothing. Fourth, decisions applying the precautionary principle must be “open, informed, and democratic” and “must include affected parties.” – The Environmental Research Foundation, 1998. http://www.coconino.az.gov/files/pdfs/commdev/Complete_Plan.pdf.

Predation – The act of catching another organism and eating it after it is dead or while it is still living. – SJRIP (San Juan River Basin Recovery Implementation Program) Biology Committee Glossary, May 1999, USFWS http://www.fws.gov/southwest/sjrip/Documents/DocumentsandReports/FlowRecRpt/glossary.pdf (7 pages; 187 KB).

Predator – Any animal that preys externally on others by hunting, killing, and generally feeding on a succession of hosts, i.e., the prey. – The Forest Ecosystem Management Assessment Team (FEMAT) http://pnwin.nbii.gov/nwfp/FEMAT/ Chapter 9 Glossary http://pnwin.nbii.gov/nwfp/FEMAT/Chapter_9.htm.

Privilege – A particular or peculiar benefit or advantage enjoyed by a person, company, or class, beyond the common advantages of other citizens. – NOAA Coastal Services Center (CSC) Public Trust Doctrine Glossary http://www.csc.noaa.gov/ptd/glossary.htm.

Problem wolf – A wolf that has attacked livestock, or is a nuisance animal that could potentially compromise human safety. – Montana Fish, Wildlife & Parks Wolf Final Environmental Impact Statement http://fwp.mt.gov/fwppaperapps/wildthings/wolf/finaleis/glossary.pdf (page 3/167 of 6/170 pages) Note: This website address is only accessible through its cached Google version: http://www.google.com/search?q=cache:IW3xa70bcgEJ:fwp.mt.gov/fwppaperapps/wildthings/wolf/finaleis/glossary.pdf+glossary+%22problem+wolf%22+site:.gov&hl=en&gl=us&ct=clnk&cd=1&lr=lang_en.

Taking – *There is a "taking" of property when government action directly interferes with or substantially disturbs the owner's use and enjoyment of property.* – NOAA (National Oceanic and Atmospheric Administration) Coastal Services Center (CSC) Public Trust Doctrine Glossary http://www.csc.noaa.gov/ptd/glossary.htm.

UNCITRAL – United Nations Commission on International Trade Law http://www.un.or.at/uncitral.

Wild wolf – A wolf, which is not tamed or domesticated, possessing wild characteristics and ranging exclusively in the wild, and fearing humans and human use areas. When wild wolves smell human scent, they are fearful and flee to a non-human-inhabited area. Any wolf that does not match this definition must, for safety concerns of both humans and wolves, be permanently removed.

Appendix B: Basis for Calculations

Figure 1

Cattle Prices

	Cow (Avg. wt. 850#)		Calf (Avg. wt. 400#)	
Year	**Cwt**	**Value**	**Cwt**	**Value**
2000	67.80	$576.30	101.00	$ 404.00
2001	69.20	$588.20	102.00	$ 408.00
2002	62.70	$532.95	93.60	$ 374.40
2003	69.50	$590.75	101.00	$ 404.00
2004	82.00	$697.00	119.00	$ 476.00
2005	89.00	$756.50	125.00	$ 500.00
2006	87.00	$739.50	102.00	$ 408.00

New Mexico Agricultural Statistics

Figure 2

Depredation Numbers			**Value**	
Year	**Cows**	**calves**	**Cows**	**Calves**
2000	6	8	$3,457.80	$3,232.00
2001	1	36	$588.20	$14,688.00
2002	2	26	$1,065.90	$9,734.40
2003	1	4	$590.75	$1,616.00
2004		14	$0.00	$6,664.00

2005	24	99	$18,156.00	$49,500.00
2006	10	9	$7,395.00	$3,672.00
	44	196	$31,253.65	$89,106.40

A. Total cattle losses due to wolf depredation to Catron County ranchers for 6 years (2000-2006) were:*

- Total cattle losses are 182 cows; total value: $129,764.
- Total calf losses are 854 calves; total value: $369,992.
- Total number of Catron county cattle lost during this 6 yr. period = 1,036.

From the above reported cattle losses, I figured the following:*

G**rand total financial lost from 1,036 head of cattle lost during this 6 yr. period = $499,156.**

Impacts to Catron county (using a 1.2 multiplier) = **$598,987 loss in 6 yrs.**

Impacts to the state of New Mexico (using a 1.8 multiplier) = **$898,480 loss in 6 yrs.**

* Based on WNMU SCRA 's calculations, using Gila Stockman's Association's records for the number of confirmed kills; US FWS multiplier of 7; and Catron County wolf Investigator field records for losses from 4/06 to 12/06.

BASIS FOR CALCULATIONS

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Appendix C: Cumulative Impacts on Catron County

Summary of Cumulative Effects of Resource Decisions on Catron County's Social, Economic and Cultural Fabric

Timber: Until forced to close in 1992 due to Forest Service decisions regarding the Mexican spotted owl and threatened litigation by the Center for Biological Diversity, Catron County had the most prosperous timber mill in New Mexico. Losses to the community of Reserve, New Mexico, due to the Reserve timber mill closure include, but are not limited to:

- Loss of over 150 local timber jobs directly related to the timber mill.
- Total job loss: more than 250.
- Population no longer supported: 1,000 people.
- $12 million annual loss to base industry, Catron County, New Mexico, and Arizona.
- $600,000 to $900,000 annual loss in Forest Receipts to county schools, roads and emergency services.
- $400,000 annual loss of Forest Receipts that once went toward forest restoration.
- Loss of local programs and services.

Mining: The one active mine in Mogollon was closed due to litigious actions. Fence Lake coal development ended this year, due in part to litigation threats by the Center for Biological Diversity. Economic opportunity losses to Catron County:

- Expected loss of 150 jobs.
- Expected loss of over $1 million annually to County government and schools.

Family Livestock Ranching: Catron County's major industry is livestock production. Many factors have a bearing on livestock production, including markets and drought, but federal actions, driven by well-financed Center for Biological Diversity lawsuits and affiliate litigious organizations and networks, have played the greatest havoc on Catron County's economy. Economic opportunity costs to the County include:

- Loss of over 25,000 head of cattle in the last decade.
- Loss of about $600,000 to County government and schools.
- Loss of $10 million annually in livestock production gross economic output since 1997.

Range Improvement Task Force * Report 80

Reestablishment of the Mexican Gray Wolf: The Economics of Depredation

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Photo by Gary Kramer/USFWS

Reestablishment of the Mexican Gray Wolf:

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The Economics of Depredation

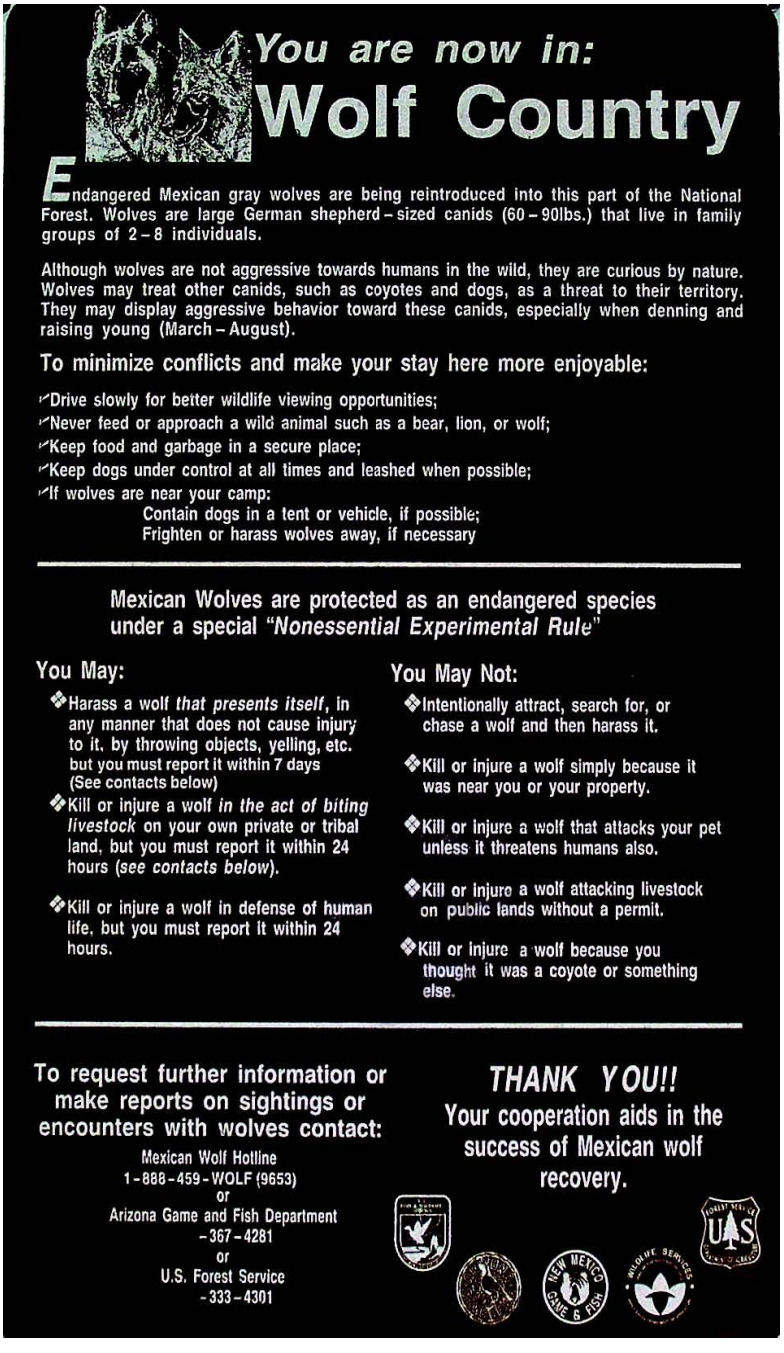
Reestablishment of the Mexican Gray Wolf: The Economics of Depredation

Nicholas K. Ashcroft, Clay P. Mathis, Samuel T. Smallidge, John M. Fowler, and Terrell T. Baker[1]

INTRODUCTION

The Mexican gray wolf (*Canis lupus baileyi*) was deliberately extirpated prior to the 1970s from the southwestern United Sates through concerted efforts and investment. This subspecies was listed as endangered in 1976 after the United States Fish and Wildlife Service (USFWS) determined they were in danger of extinction (F.R. vol. 41, no. 83). In 1982, the USFWS completed the Mexican Wolf Recovery Plan (MWRP) with goals of maintaining a captive breeding program and re-establishing the species in their historical habitat. However, lack of action by USFWS on the MWRP provoked litigation by environmental groups to force immediate implementation of the recovery plan. This suit resulted in a settlement with undisclosed conditions and parameters. By 1996, a proposed experimental rule and Final Environmental Impact Statement (FEIS) were published. In 1998, designation of a Nonessential Experimental Population was accompanied by the Endangered Species Act (ESA) section 10j special rule on managing the reintroduced population.

Reestablishment of this subspecies has generated extensive emotional, political, biological, and socioeconomic debate. This debate has failed to yield consensus regarding the success or failure of the recovery program. The resulting polarity has diminished constructive dialogue and constructive dialogue and



[1]Respectively, Economic Development Specialist and Assistant Professor; Extension Livestock Specialist and Professor; Extension Wildlife Specialist and Assistant
Professor; Linebery Distinguished Chair and Professior of Agricultural Economics; and RITF Coordinator, Professor, and Extension Riparian Specialist, all of the Department of Extension Animal Sciences and Natural Resources and the Range Improvement Task Force, New Mexico State University.

prevented mitigation of the issues. The current polarized state of the debate means that stakeholders fail to even seek potential middle ground. While there are many unique perspectives on the economic, ecological, social, and political impacts or benefits related to the reestablishment of Mexican wolves, they have not been clearly described or evaluated in a systematic or scientific fashion. The Mexican wolf recovery program would benefit greatly from such analyses.

Local communities and rural counties are particularly concerned about the wolf recovery program and the economic impacts it may be having on livestock operations in the recovery area. From an economic perspective, a fundamental question is whether a disproportionate burden or economic impact is being imposed on a few individuals for the good of American society.

BACKGROUND AND LITERATURE

Since the arrival of domestic livestock in the Southwest, there have been several efforts to control or eliminate predators—wolves (*Canis lupus*), grizzly bears (*Ursus arctos*), mountain lions (*Puma concolor*), bobcats (*Lynx rufus*), and coyotes (*Canis latrans*). In 1893, the Territorial Bounty Act was passed by the Arizona–New Mexico Territorial Legislature, allowing a bounty to be paid on stock-killing predators. In 1907, the U.S. Biological Survey and Department of Agriculture assessed damages and began a campaign to control predators. By 1914, Congress created the Biological Survey, including the Predatory Animal and Rodent Control Program, which was responsible for experiments and efforts to eliminate wolves, prairie dogs, and other animals injurious to agriculture and animal husbandry. These efforts, along with private bounty programs, were developed to address the economic impacts of predation on livestock and disease transmission (e.g., spread of rabies) and were the primary reasons for eliminating these predators. While there was a perceived threat to human life from attacks by predators, depredation of livestock and associated economic impacts were likely what led to the concerted effort to control predators at that time. Accompanying the extensive efforts toward eliminating harmful and predatory animals was the development of more efficient and effective methods of elimination.

The estimate of economic damage in New Mexico caused by 40 to 50 wolves in 1918 was $60,000—equivalent to about $960,000 in 2007 dollars (Brown, 1992). From 1915 to1920,[2] wolf-induced economic losses were estimated at half a million dollars—comparable to $9.4 million in 2007 dollars (Brown, 1992). In a 1921 U.S. Department of Agriculture news release, the Bureau of Biological Survey estimated annual economic losses in livestock of $20 to $30 million ($205 to $308 million in 2007 dollars) to all predators throughout the West. According to Brown (1992), average destruction by predatory animals during this same period was estimated to be $1,000 worth of livestock annually ($10,000 in 2007 dollars) for each wolf and mountain lion, $500 ($5,000 in 2007 dollars) for each stock-killing bear, and $50 ($500 in 2007 dollars) for each coyote and bobcat. He also illustrated cases where substantial damage was caused by just a few predators. For example, one wolf in Colorado killed nearly $3,000 worth of cattle ($30,000 in 2007 dollars) in one year, two wolves in Texas killed 72 sheep in two weeks, one wolf in New Mexico killed 25 head of cattle in two months, and another wolf killed 150 cattle valued at $5,000 ($51,000 in 2007 dollars) during a six-month period. During this era, wild ungulate populations were low and livestock numbers had reached record high numbers, which possibly led to higher depredation rates and economic impacts. However, Mexican wolves were extirpated prior to scientific study of the

[2]Used base year 1917

predator–prey relationship. Although most of the information regarding wolf damages is anecdotal, there is little argument that wolves preyed upon domestic livestock.

The objective of the MWRP is "to conserve and ensure the survival of *Canis lupus baileyi* by maintaining a captive breeding program and re-establishing a viable, self-sustaining population of at least 100 Mexican wolves in the middle to high elevation of a 5,000 square mile area within the Mexican wolf 's historic range" (1982 Mexican Wolf Recovery Plan). Contrary to historic evidence of depredation, current recovery documents state most wolves will not depredate even when livestock are present, and that ranch failures are not expected to occur (USDI, 1982). The same document also states that only a small number of livestock owners are expected to be affected; however, some could sustain significant losses in a given year (USDI, 1982, pp. 4–7). The evolving view on predators is likely related to the distinct change in the U.S. economy that has occurred since the early 20th century. In the early 1900s, agriculture was the primary industry in the United States, seen as an important tool in settling the frontiers, and necessary for the sustenance of families. Today, most Americans do not have daily contact with agriculture or food production. The agrarian mindset under which wolves were extirpated is unfamiliar to them. However, in rural areas, and to individual family enterprises involved in agriculture, the challenges offered by the presence of wolves are real and present. It is also very likely that these family ranches disproportionately bear the economic impacts of wolf reintroduction, and this individual-level perspective is often overlooked in economic analyses of endangered species recovery. Meyer (1995) suggested that the economic effects of endangered species listings are so highly localized and of such small scale and short duration that they do not substantially affect state economic performance in the aggregate. Despite the limited contribution of endangered species listings to the aggregate, analyses of impacts at the local scale are needed. We conducted analyses and interviews of numerous livestock operations in the recovery area to examine the possibility that livestock depredation by reintroduced Mexican wolves was negatively impacting a small subset of ranches in the recovery area. The objective of this paper is to analyze the impacts of the MWRP on rural agricultural enterprises in the Mexican Wolf Recovery Area MWRA). This effort was designed to (1) provide perspective and background information to people not familiar with wolf depredation issues and (2) provide a basis for improved discussion and decision-making regarding socio-economics of individual family enterprises in the recovery area.

METHODS

Beginning in 2005, we invited ranchers in Catron County, New Mexico to discuss economic impacts of the Mexican Wolf Recovery Program on their individual operations. Ranchers interviewed can be viewed as proactive and progressive managers because they readily participated and expressed interest in devising new approaches to managing livestock in the wolf recovery area. Many ranchers expressed concern about impacts to themselves and their neighbors. Seven ranchers met two criteria: (1) directly affected with numerous depredations over several years, and (2) were willing to discuss their experiences in some detail. Ranchers reported livestock killed or injured by wolves, and we termed these *direct* losses. Some of these losses were confirmed by USDA Wildlife Services as being caused by wolves, whereas other losses were not confirmed by the agency for reasons discussed below. Interviews also revealed several types of *indirect* and *related* losses associated with the recovery program. However, there is currently no mechanism for confirming these types of losses. Each of these seven ranchers was interviewed during April of 2006 to discuss economic impacts of depredation. Using ranch records, livestock losses were classified as wolf-related or typical ranch losses. Wolf-related losses were further classified as direct (i.e., wolf killing livestock) or indirect (i.e., changed management activities due to wolf recovery program).

Direct Losses

Published ranch cost-and-return estimates

from New Mexico State University (NMSU) were used to estimate effects on net income associated with loss of cattle (direct loss) due to wolf depredation (Torell, 1998; Hawkes, 2006). Information on direct losses derived from interviews was inputted into the livestock budget model to estimate net income differences. This approach enabled comparisons of net incomes between a typical ranch with and without wolf depredations. Losses attributed to wolves were not solely confirmed kills or even investigated depredations. All animals included in the *wolf responsible* category were classified as such by ranchers, given some credible evidence (e.g., wolf tracks and no other predator tracks, known calf completely missing and only wolf tracks in the area). If the rancher being interviewed did not know the cause of an animal's death, or had no evidence of wolf involvement, animal losses were considered normal losses that would have happened without the wolf being reintroduced into the area.

Compensation Program

The Bailey Wildlife Foundation Wolf Compensation Trust is the only compensation program available to ranches for livestock losses caused by wolves. This program typically pays the current market value of the depredated animal. This is not a guaranteed compensation program, as is revealed by the fact that no payments were made in New Mexico in the fall of 2007 and spring of 2008, even though livestock depredations by wolves were confirmed.[3] We evaluated the market value relative to the real value these animals represent to a ranch, including investment to date, loss of future productivity, and loss due to replacement and acclimation (to elevation, fitness for terrain, knowledge of pasture foraging and watering locations). We also analyzed differences in compensation relative to variations within and across years. Time of year is important because livestock prices cycle within the year, with the typically highest calf value in March and April and the lowest in October and November.

[3]http://www.defenders.org/resources/publications/programs_and_policy/wildlife_conservation/solutions/full_list_of_payments_in_the_northern_rockies_and_southwest.pdf

Indirect Losses

Data from 1996 and 2006 ranch cost-andreturn estimates from NMSU (Torell, 1998; Hawkes, 2006) were used to estimate losses associated with changing management (indirect loss) at the individual ranch level. Estimates were not intended to calculate precise losses to these ranches; rather they were used to evaluate the incremental impacts due to wolf presences and management changes. Information collected during interviews was used to adjust budgets based on estimated management changes as a result of wolves on individual ranches. Indirect losses considered in the analyses used adjustments (based on interviews) of 5% more in feed cost, 50% more in fuel and maintenance of vehicles, hiring a permanent full-time person, and 1% in increased vet costs associated with changes in management in an attempt to address wolf presence.

Adobe Ranch Case Study

In addition to direct and indirect losses, ranchers reported additional expenditures or losses as a result of wolf presence on their ranch. Related losses (i.e., decreased livestock performance as a result of wolf presence) were calculated for one ranch in the Gila as a case study. The Adobe Ranch in the Gila National Forest experienced an increase in wolf presence during 2007, confirmed livestock depredations, and resulting management challenges. Adobe Ranch personnel were interviewed regarding their experiences with depredations. Ranch management personnel provided ranch monitoring records that recorded precipitation, estimated wolf presence based on sightings, number of confirmed and likely livestock depredations, and performance of steer calves from fall weaning to shipping off the ranch (a period of 35–102 days depending upon the year, 2002–2007). This practice of weaning calves on the ranch and shipping at a later date has several advantages, especially if ample forage is available. It allows the calves to be vaccinated and adapt to weaning with less stress and stress-related sickness. It can also be financially advantageous, as calves that have been weaned at least 45 days with appropriate vaccinations receive a premium,

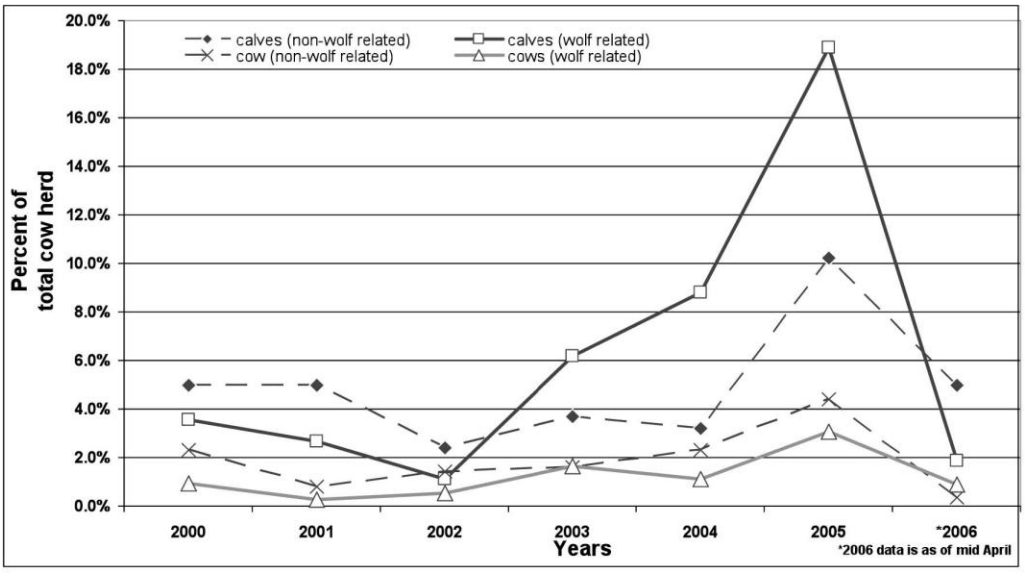


***Figure 2*. Annual livestock losses as a percent of total cow herd for several Catron County ranches.**

and market prices are rebounding from seasonal lows.

Only steer calves were used in this analysis because the heaviest heifer calves were retained as replacements some years, which artificially deflated average heifer weights at shipping. Calves were shipped off the ranch at weaning during 2004; therefore, there are no data for that year. A 99% confidence interval for calf Average addition, regression analysis was conducted to quantify the relationship between growing season (April–October) precipitation and ADG. Using calf values from previous years, estimates are provided regarding dollar losses to the Adobe Ranch from direct losses (e.g., animal mortality), indirect losses (e.g., increased medicine costs), and related costs (e.g., animal performance—or lack of gain—losses). Results are supplemented with qualitative information provided by ranch personnel with respect to wolf activity and effects on livestock management.

RESULTS AND DISCUSSION

Direct Losses

Average annual normal calf loss on these ranches (losses due to lightning, disease, coyotes, etc.) since re-introduction of Mexican wolves in New Mexico ranged from 3.2% (2002) to 10.2% (2005) as a percent of total mother cows on the ranch. Average annual normal losses of mature cows ranged from 0.4% (2001) to 4.4% (2005) as a percent of total mother cows on the ranch. Wolves were likely responsible for annual mortality of 1.1% (2002) to 18.9% (2005) of calves and 0.3% (2001) to 3.1% (2005) of cows per ranch (Figure 2), in addition to normal mortality.

Confirmed and probable livestock depredations by Mexican wolves fall into the lower range of actual depredations and do not address depredations that are never found or might be found too late for confirmation. Research in Idaho suggests that the ratio of detected kills to undetected kills is approximately 1:8 (Oakleaf et al., 2003). Many wolf depredations are likely contaminated by other predators (i.e., coyotes) and scavengers prior to confirmation of the predatory species responsible for the mortality, and in some cases species confirmation may be precluded due to contamination. Reported wolf-killed livestock numbers estimated in this analysis likely underestimate actual losses because of unfound or indeterminable losses that were listed as normal losses.

Depending on where the industry exists within the beef price cycle and the size of their operation, ranches may or may not be able to absorb additional losses. To demonstrate the effects of the price cycle, we used published NMSU costand-return estimates from 1996 (a low in the price cycle) and 2006 (a peak in the price cycle) to estimate the economic effect on an individual ranch with wolf-related livestock losses for 2005 (3.1% cows, 18.9% calves). In 1996, a ranch with about 180 cows would have a decrease in net income of $63.17 per cow, whereas in 2006, a comparable ranch would have experienced a decrease in net income of $125.18 per cow via direct losses of livestock to wolves. The 2006 ranch went from a positive net income to a negative ranch income when livestock depredations were included in the analysis. Therefore, with similar losses through the entire price cycle of this representative ranch, it would not experience any positive net returns.

The FEIS (USFWS, 1996) assumes that depredated livestock are replaced on grazing allotments, and that effects on the overall number of livestock present during a grazing season are marginal. It became clear during the interviews that this was an unsubstantiated statement because the current compensation program falls short in several areas. First, compensation only occurs for confirmed kills, and confirmation is often difficult. Second, for confirmed wolf depredations, compensation often takes 3 to 6 months. Even if compensation is received sooner, ranchers may hesitate to place a naïve animal in unfamiliar, rough terrain. Naïve animals may experience increased vulnerability to depredation by wolves, reduced performance relative to experienced local animals, and a reluctance to range far from water, which can result in excessive forage use in certain areas. Given these factors, as well as rancher hesitation to leave the ranch (to remain vigilant of further depredations), replacements would likely not be purchased until the following year. Further, animals are often selected and bred for specific traits, including birth weight, confirmation, disposition, and acclimation to terrain and climate, that are not easily replicated in purchased animals. Livestock are not easily replaceable—ranchers must search for and purchase appropriate replacement stock. Another shortcoming of the current compensation program as revealed through interviews is that compensation is paid at the current market value for a confirmed wolf kill. This practice underestimates the real value of the animal to the economic enterprise. For example, if a bred four-year-old cow is killed by a wolf, we assume that it would cost $1,000[4] to purchase a bred four-year-old cow. However, it is likely that this replacement cow will be purchased later in the year, given that the compensation takes several months. When this occurs, there will likely be one less calf at market time ($605 value[5]) for that year, and only in the following year will the replacement cow produce a saleable product. But many ranchers stated that due to the time required to acclimate, and the associated stress of raising that calf, the replacement cow will often not breed back the following year. We assumed that 30% of replacement animals would not breed back the following year (estimate provided by C. Mathis, Extension Livestock Specialist, personal communication, 2008), which contributes an additional $182 loss of income to the ranch. If we include the cost of travel to acquire the new animal (estimated at $250) the total cost of replacing the lost animal is $2,037 if compensation is delayed and $1,432 if compensation is immediate (Table 1).

Another option, and the preferred alternative of ranchers we interviewed, is to raise a replacement animal (Table 1). The opportunity costs include retaining a replacement heifer that could have been sold ($605), and waiting two years before the replacement heifer will produce a sellable product ($605 × 2). However, the cow that was killed would have had a shorter productive life than the younger heifer that replaced her. Therefore, the younger animal is credited $350 (35% of $1,000) for a potentially longer productive life. The total sum loss of $1,465 does not include feed and vaccination costs of raising the animal or the risk associated with losing the animal. This scenario assumes a constant value of animals and available forage.

Using either scenario, the likely real value of an animal lost ranges between $1,432 and $2,037 as compared to the fluctuating market value ($605–$1,000) typically paid to ranchers through the existing compensation program. Applying estimated dollar values to the total number of discovered livestock killed by wolves potentially underestimates total financial impact by a factor of eight (Oakleaf et al., 2003). We did not calculate these estimates here, as we are uncertain of the applicability of Oakleaf ’s research to the Southwest and because of the informality of our data collection. Research investigating the probability of ranchers detecting wolf related depredations of their livestock on southwestern rangelands is lacking. In addition to the direct costs of wolf depredation, indirect costs also affect the economic realities of rural citizens.

Table 1. Opportunity Costs and/or Replacement Costs for Depredated Cow as Determined Through Interviews of Catron and Sierra County Ranchers and Analysis of Market Values

Purchase of Bred Cow	
Cost of purchased cow	$1,000*
Cow not breeding back following year (30%)	$182*
Travel cost to purchase replacement cow	$250**
Immediate Replacement Total	**$1,432**
Loss of calf for current year	$605*
Delayed Replacement Total	**$2,037***
Raising Replacement Heifer	
Retained heifer calf that would have been sold	$605*
Loss of two years of production (2 calves)	$1,210*
Productive life credit of replacement heifer	-$350
Total	**$1,465**

*Market prices, April 2006 **Estimate of average costs provided by ranchers

[4]Market value as of April 2006, when this study was completed—value changes as the market fluctuates.

[5]Market value as of April 2006, when this study was completed—value changes as the market fluctuates.

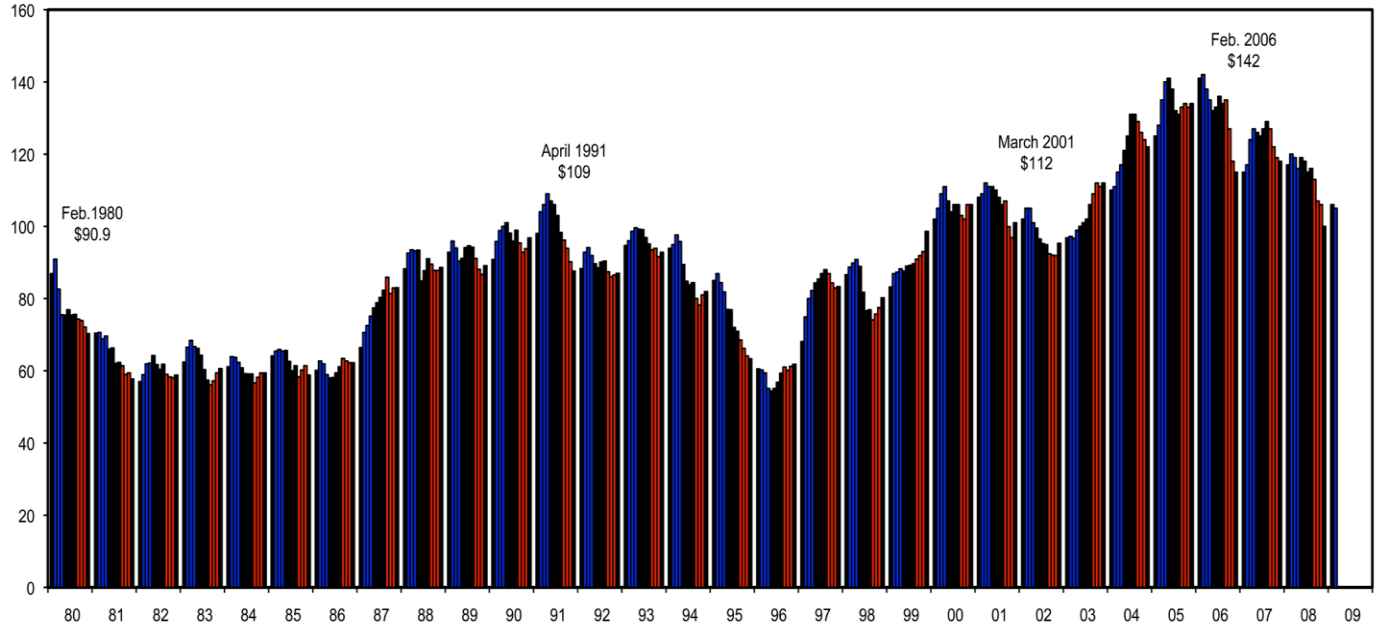


Figure 3. United States calf prices ($/CWT) from 1980 through 2008. (Source: USDA, NASS, Agricultural Prices.)

Indirect Costs

Interviews with producers revealed additional impacts to ranch income beyond direct losses of livestock. Published net ranch income estimates from 1996 (Torell et al.) suggested a loss of $189.87 per cow for medium-sized ranches (186 mother cows) in the northwest region of New Mexico, the region Catron County was grouped into in 1996. Net ranch income in 2006 for a large ranch (183 mother cows) in the southwest region of New Mexico was estimated as $52.79 per cow. Catron County was grouped in the southwest region in 2006 because it was determined its ranches were more characteristic of that region (J. Hawkes, personal communication, 2008). Indirect costs resulted from changes in management by ranchers in an attempt to minimize livestock depredations and stress-related losses associated with the presence of wolves. Adjustments in gross income and variable costs (resulting from management changes) revealed that loss in net ranch income was an estimated $338.88 and $157.04 per cow for 1996 and 2006, respectively. Reductions in calf crop percentages and weight losses associated with livestock being stressed and harassed were not estimated, but merit further consideration.

Economics of Ranching in the Mexican Wolf Recovery Area

The livestock industry in southwestern xeric (hot and dry) forests exhibits unique organizational attributes and infrastructure that should be considered when estimating economic impacts of wolf recovery on individual ranches. Most family ranches (48% to 99.6%) in the recovery area are highly dependent upon Forest Service lands for sustainability of their family's economic enterprise (USFWS, 1996). Changes in federal regulation, pressure from special interest groups, and endangered species issues add to traditional challenges that ranchers face. Traditional challenges include market fluctuations (Figure 3), the cost-price squeeze (Figure 4), weather variation, and livestock illness. As a result, these families and the communities they make up may face substantial difficulty in absorbing additional costs without recourse to adequate compensation. Economically, agriculture meets the criteria of a perfectly competitive market where all firms (i.e., ranchers) sell an identical or homogenous product, are price takers not price setters, have a relatively small share of a market, and have complete freedom to enter and exit the market. The key point here is that ranchers are price takers and unable to effect a price change or determine the price of their product. Therefore, they are at the mercy of the markets. The market has an average price cycle of 12 to 13 years from peak to peak, but can vary with external forces such as opening international borders, dairy buyouts, and weather extremes. Ranch survival may depend on when these incremental and additive impacts occur relative to the price cycle. For example, calculations of 2006 (a peak year) net income losses based on direct costs and indirect costs were $72 and $157,

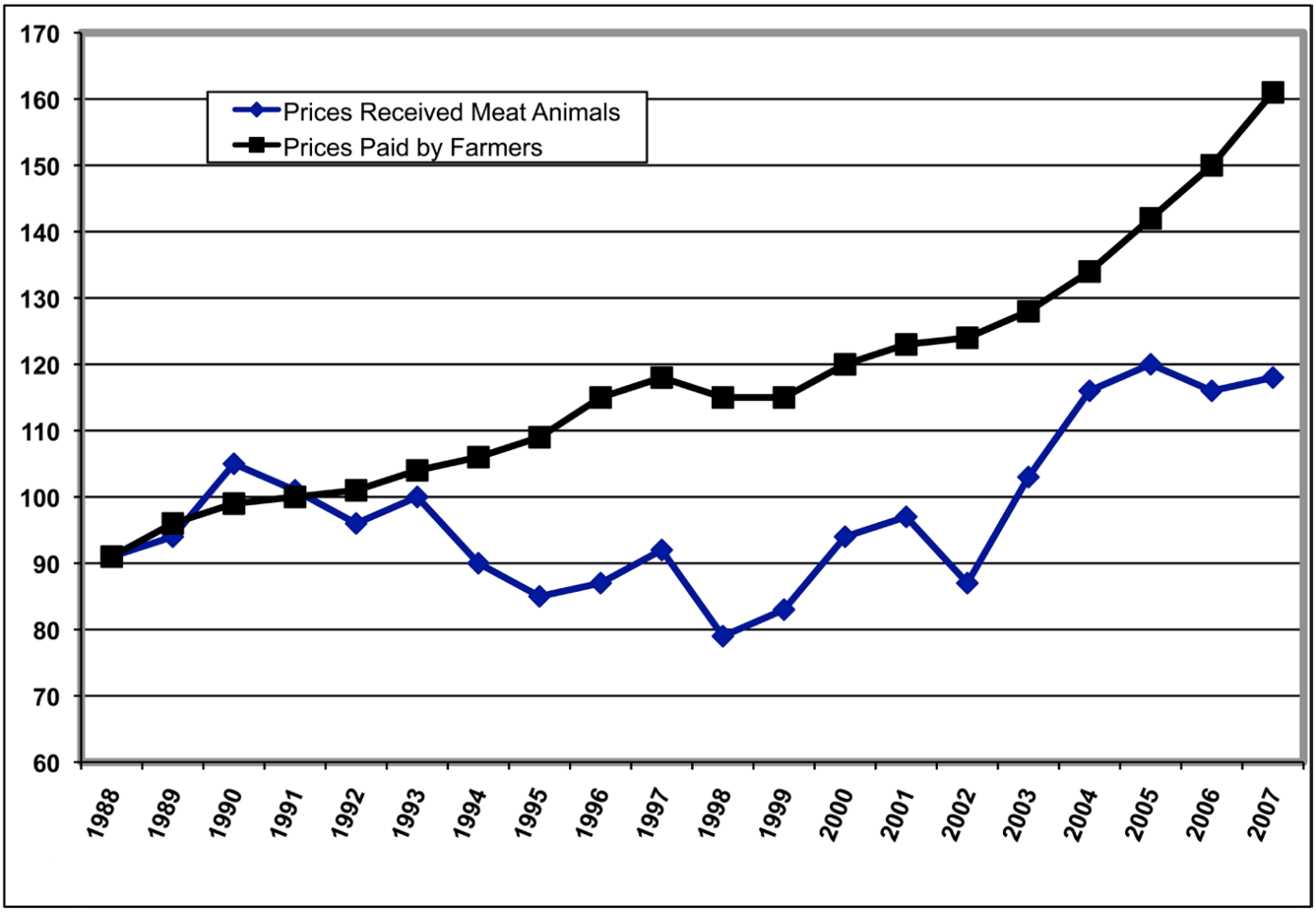


Figure 4. National Prices Received Index (PRI) and Prices Paid Index (PPI) from 1987 through 2007 for agricultural producers. (Source: USDA, NASS, Agricultural Prices Summary.)

respectively. In 1996 (a low year), net income losses net income losses for direct and indirect costs were estimated at $253 and $339, respectively. This suggests that continuous depredations by wolves on a single ranch could result in negative net incomes and dramatic effects upon the financial stability of the ranch.

Livestock prices are just one factor that affects profitability and cannot be controlled by individual ranchers. The cost–price squeeze refers to the difference between the prices paid for inputs and the amount received for a product. The Prices Paid Index (PPI) and the Prices Received Index (PRI) demonstrate an increase in operating costs accompanied by a relative decrease in prices received for the product (livestock) from 1990 through 2002 (Figure 4). Ranches are paying more for ranch supplies, in real terms, than they are receiving for their product. Although these two indices neared each other in 2004–2005, the gap has widened since then, with a decrease in the prices received and an increase in prices paid for inputs.

Given the combination and cumulative effects of low cattle prices and high input costs, we would anticipate increased hardship for ranches experiencing additional losses caused by wolves. Research is needed to investigate impacts to rural agricultural communities in association with wolf presence. Understanding the economic challenges ranchers face and identifying opportunities to offset the costs brought about by wolf recovery could benefit ranchers in maintaining their family businesses. In our study, interviewees' ability to absorb high livestock losses in 2005 was largely due to favorable livestock prices that year. However, it is anticipated that when the market takes a downturn such as that which occurred in 1996, losses will be more difficult to absorb and ranchers will be less likely to maintain a viable business. Ranchers were reluctant to identify thresholds at

which they would be forced to sell their ranches. Several did suggest that with the current price cycle and increased input costs, if calf crops fell 15% lower than average, they would seriously consider discontinuing their family beef production enterprises.

Importance of Scale

When predicting economic impacts associated with Mexican wolves, depredation rates were analyzed at a scale comprising all cattle within the recovery area (USFWS, 1982). According to the five-year review (USFWS, 2003), total direct economic impact represented between 0.05% and 0.47% of total cash receipts, and uncompensated losses represented between less than 0.02% and 0.44% of total cash receipts in the Blue Range Wolf Reintroduction Area (BRWRA). Although technically correct, these statements do not provide accurate analysis of impacts to individuals or local communities directly affected by livestock losses and costs associated with depredations by Mexican wolves. When analyzed at a state or regional scale, impacts may appear insignificant. This approach masks localized wolf activity and depredations that are often clustered on a small number of the total ranches in the recovery area. Individual ranchers may suffer a disproportionately large proportion of wolf depredation within a given time period, suggesting that research and associated analyses need to occur at a scale congruent with the effect. To a rural community, each ranch is a key social and economic contributor, helps define customs and culture, and is an important component of the local economy. What affects one ranch affects its neighbors and the community at large. At a region or state level, individual ranch enterprises have a less significant impact, yet still contribute and define the larger area socioeconomically. The greater the spatial scale used, the less any one individual contributes proportionally; this masks the localized effects individuals and communities experience with regards to wolf presence. It is important, for full disclosure, to analyze the effects of the recovery program at a smaller scale relevant to affected parties, not simply at the greater scale of interested parties.

Adobe Ranch Case Study—Performance-Related Losses

From 2000 to 2003, the Adobe Ranch knew of only two wolves on the ranch. In 2004, the number of wolves increased to nine, until 2006 when the total dropped to six. By the fall of 2007, a total of 14 wolves (three packs) were known to be on the ranch (Adobe Ranch Management, personal communication, 2008). Wolves were also in close proximity to the ranch headquarters and branding pasture beginning in February. This level of wolf activity coincidently led to eight confirmed and one probable depredation. Total depredations for 2007 included confirmed (13 animals), probable (1 animal), and possible (4 animals) on the Adobe Ranch. The Adobe Ranch alone accounted for 46% of the total confirmed depredations reported to the Bailey Wildlife Foundation Wolf Compensation Trust in New Mexico for 2007.[6] Also, 50% of the possible depredations and 100% of the probable depredations for 2007 occurred on this ranch.

Weaning weights, shipping weights, and site-specific precipitation were available for the Adobe Ranch from 2002 to 2007. Growing season precipitation was correlated to steer performance, as forage production is closely related to growing season precipitation. Cumulative precipitation from April through October was considered growing season precipitation.

There was little variation in steer ADG from 2002 through 2006 (Figure 5), with an average of 0.08 lbs/day, which is considered normal performance in the region when fall weaned calves are retained (C. Mathis, personal communication, 2008). However, ADG in 2007 was much lower than in previous years when calves were managed similarly between weaning and shipping, falling well below the lower limit of a 99% confidence interval of -0.75 lb/day. Using actual market values from the Clovis Livestock Auction in Clovis, New Mexico,[7] cost of the estimated impact of weight loss in 2007 was -$108.83 per steer weaned:

$$NG = (ASW - (AWW + (ADG*D))) * (S + P) / 100$$

NG = Net gain or loss
ASW = Average shipping weight
AWW = Average weaning weight
ADG = Average daily gain
D = number of days between weaning and shipping
S = Sale price ($/cwt)
P = Premium ($/cwt)

The previous calculation assumes a $7.00 premium for weaning and preconditioning steer calves a minimum of 45 days before shipping (King, 2007). Additionally, growing season precipitation explained only 2% ($r^2 = 0.02$) of the variation in steer ADG from weaning to shipping on the Adobe Ranch (Figure 6). Therefore, 98% of the variation in ADG was due to something other than the growing season precipitation

[6] http://www.defenders.org/resources/publications/programs_and_policy/wildlife_conservation/solutions/full_list_of_payments_in_the_northern_rockies_and_southwest.pdf

[7] http://www.retail-lmic.info/tac/spreadsheets/spreadsheets.html—No. 1-2 steers, 450- to 500-lb calves with average dates of weaning October 6 and shipping on December 10.

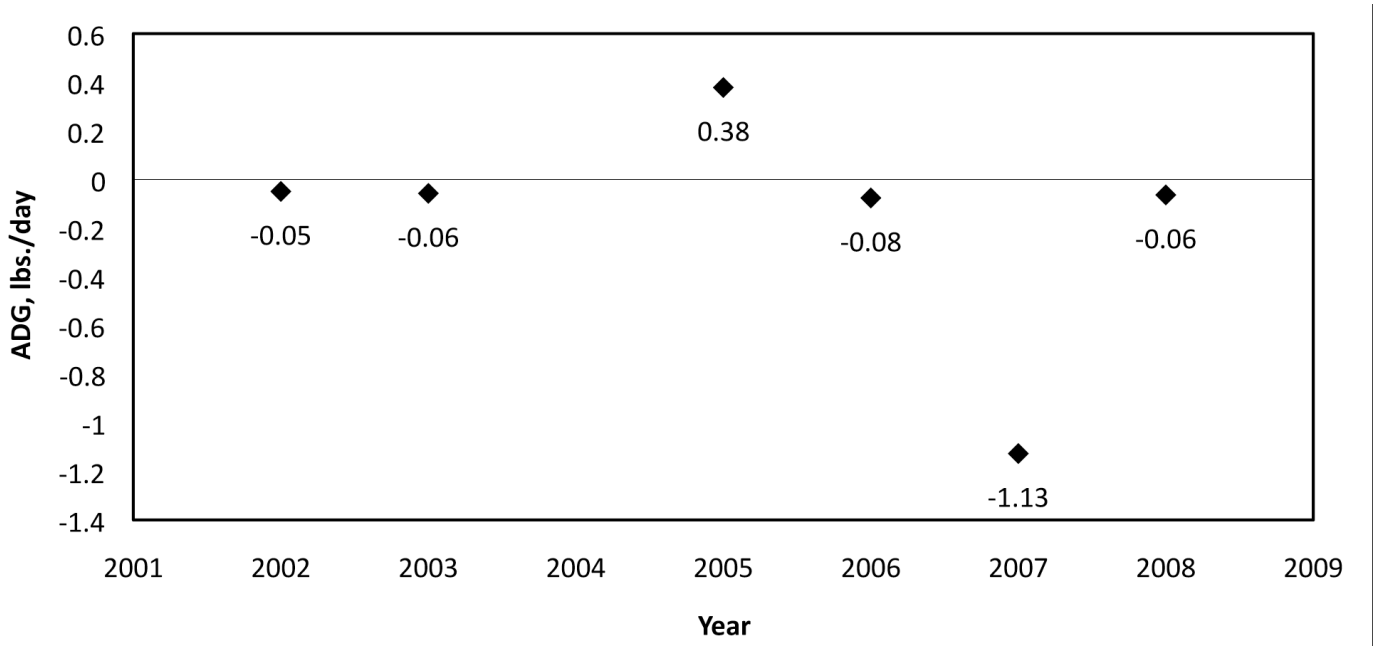


Figure 5. Average Daily Gain (ADG) for steers from 2002 through 2008 on the Adobe Ranch, Catron County, NM.

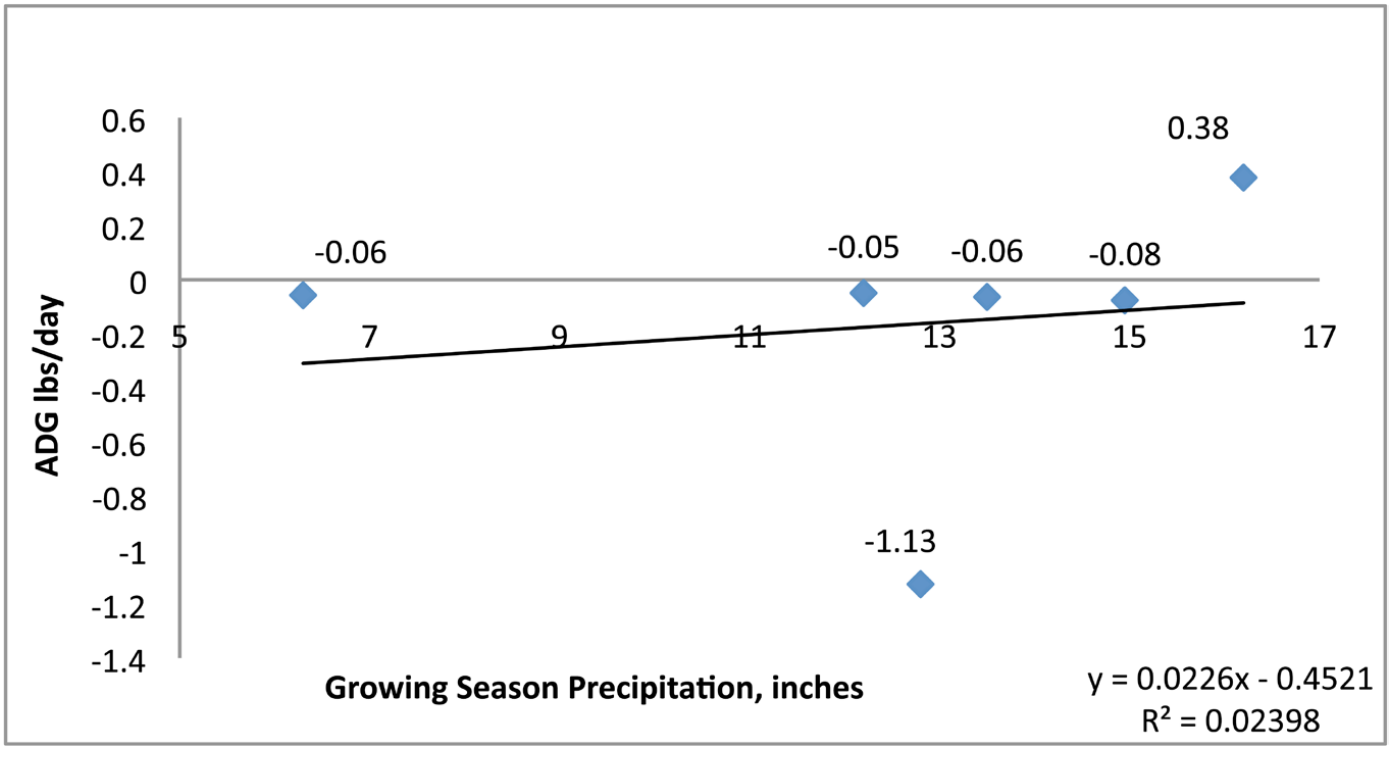


Figure 6. Impact of growing season precipitation on steer Average Daily Gain (ADG) from 2002 through 2008 on the Adobe Ranch, Catron County, NM.

received on the ranch.

These results do not prove that wolvesimpacted steer performance because the data were not generated from a controlled study. However, with negligible impact of growing season precipitation on calf ADG, and calf management in 2007 similar to previous years, it is possible that increased wolf activity and depredation among weaned calves had a detrimental effect on steer ADG. At the least, this case study supports the need for research on non-lethal impacts of wolves on livestock. Total values for direct losses on the Adobe Ranch ranged from $8,585 for confirmed losses to a combined $11,993 for confirmed, possible, and probable losses. These calculations assumed an opportunity loss for calves equal to the shipping values of steers in the fall of 2007. Cow values were the average value of replacement cows (medium to large, young to middle aged, and 3- to 6-months bred) at the Roswell livestock auction during the month the depredation occurred (http://www.ams.usda.gov). Management of the Adobe Ranch estimated that there were probably four calves lost for every calf loss investigated. Using this estimate, the direct impact increases to $36,407 for 2007, not including the additional cost in medicine ($720.00) and labor/opportunity costs of approximately $1,484.33.

SUMMARY

The entire U.S. economy has changed drastically since the extirpation of wolves in the Southwest. Big game animals have become more valuable, outdoor recreation continues to increase, and ranches have changed from a few large operations to many smaller operations. Mexican wolf depredations represent potentially greater economic losses to smaller individual ranches than to larger ranches in the past. Economies of scale allowed larger ranches to more easily absorb these types of losses before the Mexican wolf eradication than smaller ranches can today. Similarly, impacts today would have incremental effects on local communities and counties, as the historic tax bases have decreased with reduced livestock numbers and the loss of receipt-generating activities such as logging.

"Adaptive management" has been a common phrase used for the Mexican wolf recovery program, presumably because scientific data would be used to guide management decisions. As more scientific information becomes available from research, management practices should be adjusted to improve potential for biological and social success. However, there has been very little scientific research on the Mexican wolf since its release into the wild, and virtually none has been made available to local producers to help them manage their livestock in the presences of wolves.

MANAGEMENT IMPLICATIONS AND FUTURE WORK

Our analysis did not include the daily disruptions and costs accrued by the rancher living with wolves. A great deal of this information was relayed during interviews, but these types of data are qualitative and difficult to summarize and analyze. These include, but are not limited to, time and money spent cooperating with the USFWS, not being able to use their cow dogs, and precautionary measures for horses and cattle. It should be recognized that there are undoubtedly other costs that were not quantified and which, cumulatively, represent significant burdens to residents in the MWRA. There have been some attempts to identify how many depredated livestock are never found or identified as wolf-related, but the results of the research conducted in the Southwest have not been finalized or published. An additional project by the University of Arizona is trying to determine what the wolves are eating through tracking movements of wolves. This could be beneficial information to local livestock producers in planning grazing strategies to avoid depredations by wolves. There has also been research conducted by Texas Tech University that determined elk to be the primary prey of the Mexican wolf (Reed et al., 2004). However, ranchers in the area were concerned that the data were collected on an area or at a time when no livestock were present. Any flaws in experimental design of this nature must be addressed before research outcomes will garner widespread acceptance. Economic analysis relies on results of these types of research to determine a comprehensive set of financial-based variables to ranch net income. Information from well-designed, well-executed studies must be made available to the local producers and should focus on including producers in the development of research questions and objectives, data collection, and interpretation. It is our estimation that dissemination of research results by existing federal and state government wildlife agencies will not result in significant acceptance by local producers; too much trust has been lost. Third-party entities trusted by local citizens and with the scientific expertise to interpret results should be part of the scientific inquiry, design, and education/outreach effort. This approach would undoubtedly improve the reception given such scientific information and the social acceptance of the recovery program.

Only after goals and objectives of wolf recovery have been clearly identified and specifically defined will objective third-party scientists be able to develop research that addresses management of wolf

recovery and its effect on residents. There are multiple issues and conflicts (such as effects on hunting, pets, livestock industry, and residence), with complex interactions, that have been identified since release of Mexican wolves in the BRWRA. This analysis has demonstrated that our understanding of the disproportionate economic impacts on a few affected individuals has been limited and that further investigation is warranted. Potential research questions include, but are not limited to, (1) Why are wolf depredations more numerous in certain geographic areas (and what are the characteristics of these areas)? (2) Are depredation rates and numbers a function of animal husbandry practices, topography, prey availability, the breed of livestock, or individual wolf-specific factors? (3) Is adapting livestock and wolf management practices from other areas to minimize wolf depredation practical and effective in the Southwest? and (4) How can we identify and implement innovative practices that incorporate unique habitats, wild ungulate populations, management practices, and local customs and cultures? Once data on these types of questions are collected, a comprehensive economic analysis will be possible in determining the effects of wolf presences on rural economies dependant on livestock agriculture for their livelihoods.

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NOTES

Printed September 2010

Comparability of Actual Losses to "Confirmed" Wolf Depredations in Wolf Denning, Calf/yearling Core Areas Catron County, New Mexico

Submitted to:

Catron County Commission

Reserve, NM

Submitted by:

Jess Carey

Catron County Wolf investigator

January 21, 1911

Preface:

In 1998 Mexican gray wolves were re-introduced on the landscape in Arizona by the U.S. Fish and Wildlife Service. Shortly thereafter Mexican wolves dispersed across the state line into New Mexico. Wolves were also trans-located into New Mexico from Arizona; among them were problem wolves that had prior confirmed livestock depredations. These problem wolves continued to kill livestock on family ranches in New Mexico.

This study compares cattle losses on 5 New Mexico ranches before and after the inception of the Mexican wolf re-introduction program. When wolves moved onto the ranges each ranch experienced a significant decrease in the size of fall calf crops, and revenue. Because wolf-caused mortalities are difficult to detect and prove in range livestock areas each discovered carcass is categorized according to the likelihood of wolf-caused mortality; confirmed, probable, possible or unknown. The actual mortality rate, due to wolf-related depredations, that go undetected or unconfirmed is unknown. Two studies (Oakleaf, et. al., 2000 and Bjorge and Gunson, 1985) on cattle have shown that for every 5.8 or 6.7 cattle lost only 1 confirmed kill was noted. Evidence from this study corroborates those findings and shows a direct correlation between introduction of wolves and livestock depredation, suggesting the ratio may be significantly higher in some situations.

To alleviate the taking of private property without compensation by the Federal Government, the organization, Defenders of Wildlife offers 100% market value compensation for confirmed wolf kills and 50% for probable. Certain conditions must be met which have proven largely unfeasible to livestock owners. During the period of this study, ranchers received $8100 in compensation for over 600 losses that totaled more than $380,000[1]. Two of the ranches went out of business[2], one remediated the situation by moving to other pastures and hiring a range rider and another sold off all livestock until 2010.

[1] Compensation offered by DOW was meted out to 3 ranches; A $600/$131,000.00 loss, D $1200/$35,400.00 loss, E $6300/$55,505.00 loss.

[2] Note: in the fall 2009 Ranch A sold the remainder of his livestock and went out of business, then passed away.

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DISCUSSION

The 558,065 acre Gila Wilderness, stretching into 2 counties, Catron and Grant, was initially considered to be ideal Mexican wolf habitat. Human activity is minimal. The U.S. Forest Service has eliminated all but six of the historic grazing allotments. Currently only five allotments, in Grant County, are stocked with 422 head including over 345 cow/calves[3].

Over the last 10 years, the U.S. Fish & Wildlife Service (USFWS) has released numerous Mexican wolf packs into the interior of the Gila Wilderness. Despite these supposedly idyllic conditions, not one of the wolf packs has remained. Within a short time after release, the wolf packs leave the Gila Wilderness and travel to ranching operations, homes and communities scattered throughout the surrounding Gila National Forest.

Since April 2006, there have been 172 wolf-animal or wolf-human interactions reported on private property. Behavior that would be considered unusual in truly wild wolves appears to be the norm for captive released wolves[4]. Wolves have approached occupied areas and marked their territory by urinating and defecating on tires, equipment, ice chests, porches and claimed their territory by fighting over specific sites, including 23 scrapes at one home.

The evidence suggests that fostered Mexican wolves are unable to adapt or thrive in the designated recovery area and are habituated to humans. They seek humans, lack an avoidance response towards them, are dependent on them and are opportunistic predators on domestic animals. It is likely that the habituated wolf parents will teach their offspring the benefits of humans and human use areas. It is expected that the wolf recovery program will lead to further livestock depredation, economic crises for ranchers and counties, increased cost to the taxpayers of our nation and wolves that still fail to thrive. The release of more fostered wolves will not benefit the wolf recovery effort. Unfortunately the focus of the debate is changing towards the compensation aspect rather than the purpose and need for the Mexican Wolf Introduction program.

Adaptive Management Oversight Committee (AMOC) - (NOTE, AMOC is no longer involved).
An interagency Adaptive Management Oversight Committee (AMOC) manages the wolf project, which is carried out on the ground by an Interagency Field Team (IFT). AMOC confirmation standards currently in place require that evidence at the scene and on the carcass include:

1. Measurable canine spreads with corresponding hemorrhage;
2. Massive hemorrhage in the muscle tissue;
3. Large bones broken;
4. Measurable compression canine spreads;
5. Blood trail;
6. Ground disturbance;
7. Uprooted/torn/tramped vegetation;
8. Wolf tracks;
9. Wolf scat;

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[3] Grazing information provided by the USFS Wilderness District. In Catron County the Jordan Mesa/Black Mountain permit is allotted 20 cows and is in Non-Use. There are five permits in Grant County located in the southern portion of the Gila Wilderness; Canyon Creek - 5 cows, permitted for 20 cows; Indian Creek is 50 head; Mimbres 230 cow/calves; East Canyon 65 cow/calves; Shepard permit 72 steers. The total numbers of grazing cattle in the 558,065 acres of the Gila Wilderness is 422 head. All other historic grazing permits have been eliminated by the U.S. Forest Service.

[4] There is a lack of scientific studies on Mexican wolf behavior. Data has been collected by Catron County, New Mexico since the USFWS release of Mexican wolves in 1998. There are many unknowns, and unusual wolf behavior has been documented by Catron County including:

- Mexican wolves urinating on vehicle tires and on an ice chest located outside an occupied camp trailer.
- A wolf defecating on the front of an ATV vehicle located in a front yard.
- Wolves defecating on porches and yards at door entrances of occupied homes.
- Scrapes at occupied residences where the wolves were claiming the residence as part of their territory.
- Numerous territorial scrapes at one residence where wolves were documented at the home 23 times.

10. Attack site;
11. Feeding site;
12. Drag marks;
13. Ground and aerial telemetry documenting wolves at the scene or in the area;
14. Other confirmed livestock depredations in the immediate area

Adaptive Management Oversight Committee (AMOC) members have challenged wolf-livestock depredation findings by Wildlife Services and implemented strategies favoring wolf survival even when risk to livestock or human enterprise is at stake. In order to prevent female wolves or wolves with 2 strikes against them from permanent removal, AMOC members have blamed depredation strikes on non-depredating wolves, contrary to Wildlife Services findings. AMOC implemented an unwritten rule which requires wolf depredations be confirmed by a specific "canine spread with corresponding hemorrhage." Even when these strict, very specific requirements are met, confirmation has been denied. Livestock have been found with canine spreads and rake marks with corresponding hemorrhage consistent with wolf attack. This event was still not classified as a confirmed wolf kill because the scene lacked wolf presence. These disputable actions have cast doubt on the credibility and impartiality of the AMOC and IFT. They have a real effect when these determinations skew the statistics, because resource owners to lose compensation or, worse, allow habituated, depredating wolves to remain on the range. It is also tampering with evidence.

Loss of evidence

Wolves kill livestock by consumption, not by slaughter. Therefore in cases where there are non-lethal capture bites on the carcass and livestock have fled the attack/feeding site, investigative conclusions will not confirm wolf depredation. This results in lost compensation to the resource owner. Wolves can stress cattle to a point they can no longer stand; once they go down the feeding begins while they are alive.

Evidence that has a direct effect on the findings of livestock death investigations by USFWS, WS and Catron County may be lost for various reasons. Loss of evidence does not equate to non-depredation. Reasons for loss of evidence include but are not limited to:

1. Missing livestock, no remains because wolves ate the entire carcass;
2. Coyotes, birds and other scavengers consuming remainder of calf carcasses;
3. Calves/yearlings/cows could not be found in rough remote terrain;
4. Advanced decomposition; rapid and severe in summer weather;
5. Insect infestation;
6. Weather conditions;
7. Rocky, hard ground conditions limit impressions;
8. Untimely carcass detection.

When livestock flee an attack/feeding site, evidence confirming a depredation may be lost. However, these indicators remain:

1. Blood stains/drainage on carcass inconsistent with carcass position;
2. Blood stains/drainage on lower legs indicating that the victim was standing after being fed upon;
3. Lack of blood drainage from wound onto the ground;
4. Blood spatter indicating the droplets came from a height consistent with the standing victim;
5. Wound/skin glazed over (dried) inconsistent with the time of death;
6. Fresh areas exposed within the glazed over (dried) area due to non-wolf scavenging;
7. Scavengers identified at the carcass site, (e.g. birds, coyotes, etc.);

8. Insect infestation inconsistent with time of death (e.g. fly eggs hatch within 24 hours, live for approximately one week, turn into pupae; depending on species, flesh fly life cycle 8 to 21days).

Negative effects beyond wolf-caused mortality

The negative effects to livestock producers caused by Mexican Wolves are a wide spectrum. They have either been ignored or and have not been addressed by the US Fish and Wildlife Service. Data and documentation of wolf recovery efforts from other states were not utilized to mitigate these negative effects in New Mexico and Arizona.

The presence of wolves induces chronic stress in cattle leading to loss of body condition, weight loss, immune suppression, decreased pregnancy rates-open cows, abortion of calves, pre-mature calves, weak new-born calves and even altered demeanor of cows from docile to aggressive. Wolf-caused stress disrupts a cow's breeding cycle; the resulting calf loss must be measured in monetary value as if the wolf depredated a calf.

The negative impacts of Mexican Wolf recovery to livestock producers have severe economic effects on local agricultural industry, including:

1. True livestock losses are not reflected in confirmed and probable investigative findings;
2. Few livestock depredations are actually compensated;
3. Cumulative effects of wolf predation makes livestock production unsustainable;
4. Economic impact on individual family ranches is devastating, and spreads throughout the economy;
5. Wolf depredation disrupts grazing management plans;
6. Increased uncompensated hours and expense tending injured calves;
7. Increased uncompensated hours and expense checking livestock;
8. Increased uncompensated hours and expense mending fences when wolves attack/run livestock through them;
9. Increased uncompensated hours and expense gathering livestock and returning to proper pasture;
10. Loss of market value for maimed and disfigured calves;
11. Loss of replacement heifers/production;
12. Loss of revenue while new herd takes several years to acclimate;
13. Loss of revenue while replacement heifers take three years to acclimate into an existing herd.

County Findings

Catron County has documented, on one ranch that 36% of the yearlings, confirmed as having been attacked and fed upon by the Middle Fork Pack, were still alive after the initial attack/feeding and fled a great distance before stopping, or dying, at the site where they were found. Wounds on livestock from wolf attacks have been documented with maggots three quarters of an inch long.

Since June, 2010 the USFWS has supplemented horse meat as well as elk and deer road kills to the diet of the San Mateo Pack (with 5 confirmed livestock kills) and the Middle fork Pack (with11 confirmed livestock kills) to keep them from depredating more livestock. When the supplementation ends, these packs will continue to kill livestock and teach their offspring to become livestock killers also.

One note of interest concerning yearlings: USFWS initiated supplemental feeding stations in an effort to discourage depredation of livestock. When wolves were not supplemented, they returned to a carcass and continued to feed. However, after a supplemental feeding station was put out by the USFWS, the wolves attacked and ate approximately 15 to 20 pounds out of the rear ends of three yearlings and did not remain to feed. These yearlings lived and traveled from the attack/feeding site.

During this same period when the wolves were heavily hazed out of the yearling herd, the wolves would circle the hazers and make additional confirmed depredations. The kill interval averaged every four days.

Catron County has compiled information from numerous ranches with wolves' denning in calf/yearling core areas and investigations which indicate the following:

1. Wolves subsist on small calves;
2. High incidence of wolf depredation occurs during the period when wolves were most active, i.e. providing sustenance to denning female and offspring;
3. Intensive localized wolf depredation of small calves;
4. After initial wolf gorging off calf and returning to the den, calf carcasses are scavenged and consumed by coyotes, requiring wolves to increase the frequency of their kill sequence;
5. Wolves' utilize 20 pounds per calf depredation, coyotes and scavenging birds utilize remainder of carcass;
6. Frequent wolf kills in an area invariably causes coyotes to swarm to that area;
7. Few calf carcasses (as compared to adult cattle carcasses) are found for investigation;
8. Carcass remains are mostly consumed, destroying evidence of depredation;
9. Handicapped wolves with missing limbs/feet target (prefer) livestock, as wild game is difficult to capture;
10. When wolves den on a ranch the USFWS blame ranchers for not preventing livestock depredations;
11. USFWS demands that ranchers change their entire husbandry scheme to accommodate the presence of wolves; if the rancher refuses, no compensation is paid on confirmed or probable livestock depredations by Defenders of Wildlife;
12. Ranchers cooperating with the USFWS wolf recovery agencies nevertheless continue to have livestock losses.

Many ranchers fear they will go out of business because of actual livestock loss. For every confirmed wolf depredation there are an estimated seven (7) that are not found and confirmed. Our evidence shows that the presence of wolves denning in calf core areas cause many more than seven (7) depredations for each confirmed wolf/livestock depredation. Wolves select denning sites based on the presence of easy prey (livestock). Indications show that when wolves den in calf core areas the ratio of confirmed losses to true losses increases beyond the numbers suggested in a 2003 USFWS study by John Oakleaf.

Comparability Study

Prior to this study, the relationship between high calf mortalities and proximity of denning wolves was not known. . There has been insufficient research conducted on the cause and effect of livestock losses when Mexican wolves are denning in or near calf and yearling core areas. A core area is a grazing pasture, enclosed by barbwire, where mother cows with calves and yearlings are legally present and maintained. Unlike elk and deer, which have the ability and agility to clear barbwire fences and escape pursuing wolves, cattle confined within fences are easy prey when wolves attack.

This study compares the following factors on five subject ranches A, B, C, D, and E, located within the Blue Range Wolf Recovery Area in Catron County, New Mexico:

1. Historic pre-wolf normal calf/yearling losses;
2. Confirmed and probable wolf calf/yearling depredations;
3. Actual calf/yearling losses;
4. Compensation paid by Defenders of Wildlife.

5. USFWS John Oakleaf 2003 study, carcasses found 1 to 8 ratio

Four of the ranches are cow/calf operations and one a yearling operation. All five ranches share a constant factor: Mexican wolf packs den in and or near calf and yearling core areas. Mexican wolves kill livestock throughout the year, not just during denning. When wolves begin to den packs travel to areas where livestock are present. They seldom den in areas lacking livestock. Findings by USFWS, WS, and Catron County confirm that wolves denning in core areas leads to major livestock losses with few carcasses found. Coyotes swarm to areas where wolves are continually killing livestock, destroying evidence of wolf depredation. An unrealistically low number of confirmed or probable depredations results.

Conclusions and recommendations

Confirmed and probable findings do not reflect the actual number of livestock losses. Ratios ranged from 1:9 to 1:119, averaging 1 confirmed to 34 actual wolf depredations.

Annual post-wolf introduction losses are higher than the average annual pre-wolf losses for the five study ranches:

- Total combined livestock losses = 651.0 head,
- Total combined dollar value losses = $ 382,198.50

In this comparability study, two of the five ranches went out of business[5]; one sold out and the second is on the market now. A third ranch sold off their livestock in the fall of 2009 and did not re-stock cattle in 2010.

To alleviate the taking of private property without compensation by the Federal Government, confirmation standards and the compensation scheme as a whole must be reevaluated. In-depth studies must be conducted to evaluate the negative impacts of wolves' denning in calf/yearling core areas and the effects of wolf-related stress on livestock. Evaluation of data must include the wide spectrum of negative impacts to livestock and livestock producers, rather than the current focus solely on benefits to wolves. Recommended areas of study include:

1. Pre-wolf introduction historic annual losses;
2. Post-wolf introduction annual livestock losses;
3. Wolves denning in calf/yearling core areas;
4. Wolves denning near calf/yearling core areas;
5. Wolf rendezvous sites located in calf/yearling core areas;
6. Wolf-claimed territory overlapping livestock core areas; and
7. Wolf-caused chronic stress and effects on livestock.

[5] **Note: in the fall 2009 Ranch A sold the remainder of his livestock and went out of business, then passed away.** On May 30, 2010, a sad day in our community, rancher A passed away. I talked numerous times with rancher A about the psychological stress of losing his calves to wolves that put him out of business. He stated he could not take it anymore. He had trouble sleeping and worried all the time about wolves killing his calves. He felt hopeless and helpless to protect his private property. He was a law abiding citizen and would not take matters into his own hands against the federally protected wolves. His children could not take over the ranch because it was not sustainable with wolf presence. In the fall of 2009 he sold what was left of his herd. In 2008 and 2009, with a combined loss of 219 head, valued at $130,800.00, his ranch was doomed. The USFWS would not remove the San Mateo pack that had numerous confirmed depredations. They remained on the landscape and continued to kill livestock. There are many family ranchers that suffer psychological stress due to wolves killing their livestock, a taking of private property, with no compensation

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Appendix A – Ranch Study Data

Ranch A
Ranch A is a cow/calf operation. Records of average annual pre-wolf introduction losses were 16%. The herd consisted of 300 head. Herd makeup: 20 bulls, 25 replacement heifers (not expected to calve), 0 steers and 255 production cows. 255 production cow numbers X 16% average pre-wolf annual calf losses = a 41.0 head loss. 255 – 41 = 214 fall calf crop number, representing an 83.9% calf crop. Losses pre-wolf were attributed to calving, open cows, coyote predation, and winter weather.

2008, the San Mateo Pack denned in calf core areas on Ranch A. The heard consisted of 300 head. Herd makeup: 20 bulls, 0 steers, 25 replacement heifers
(not expected to calve) and 255 production cows. Fall calf crop numbers were 95.0 head.

255 production cows – 41.0 head pre-wolf calf loss = 214.0 calves – 95.0 fall calf crop numbers = 119.0 additional calf crop loss.

Fall calf crop numbers dropped from 214.0 head to 95.0 head, representing an additional 47% loss beyond normal pre-wolf losses.

Monetary loss = 47% calf loss with wolves' denning in calf core area. 119.0 X $600.00 = $71,400.00 additional dollar loss with no compensation.

2009, the San Mateo Pack denned in calf core areas on Ranch A. The herd consisted of 300 head. Herd makeup: 20 bulls, 23 replacement heifers (not expected to calve), 0 steers and 257 production cows.

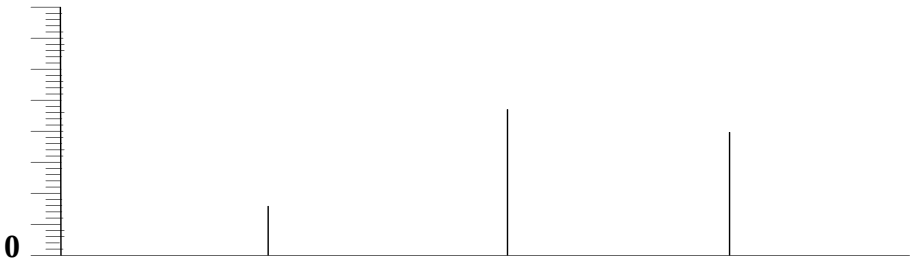
257.000 head – 41.0 head pre-wolf calf loss = 216.0 calves – 116.0 fall calf crop numbers = 100.0 additional calf crop loss.

Fall calf crop numbers dropped from 216.0 head to 116.000 head, representing an additional 39% loss beyond normal pre-wolf losses.

Monetary loss = 42.800% calf loss with wolves' denning in calf core area. 100.0 X $600.00 = $60,000.00 additional dollar loss with no compensation.

Graph - Calf Loss - Ranch A

200



	Pre-Wolf Annual Losses	2008 wolves' denning	2009 wolves' denning
Calf loss	**41.0 head**	**119.0 head**	**100.0 head**

Wolf denning losses are additional to pre-wolf losses

On Ranch A, the findings of investigations by USFWS, Wildlife Services and Catron County utilizing AMOC set standard for wolf depredation confirmation were:

2008: wolf depredations = calf confirmed 1, calf unknown 1
2009: wolf depredations = calf confirmed 1, calf probable 1

Defenders of Wildlife compensation Rate;

Confirmed at 100% market value
Probable at 50% market value
Possible at 00% market value
Unknown at 00% market value

2008
Confirmed: 1 – calf = $600.00
Probable: 0-- calf $300.00
Possible: 0 - = $000.00
Injury: 0 – = $000.00
Unknown: 1 –calf = $000.00
Total = $900.00

2009
Confirmed: 1– calf = $ 600.00
Probable: 1-- calf = $ 300.00
Possible: 0– = $ 000.00
Unknown: 0 – = $ 000.00
Total $ 900.00 compensation denied

Compensation paid to Ranch A: 2008 = $600.00
2009 = $00000
Total $600.00

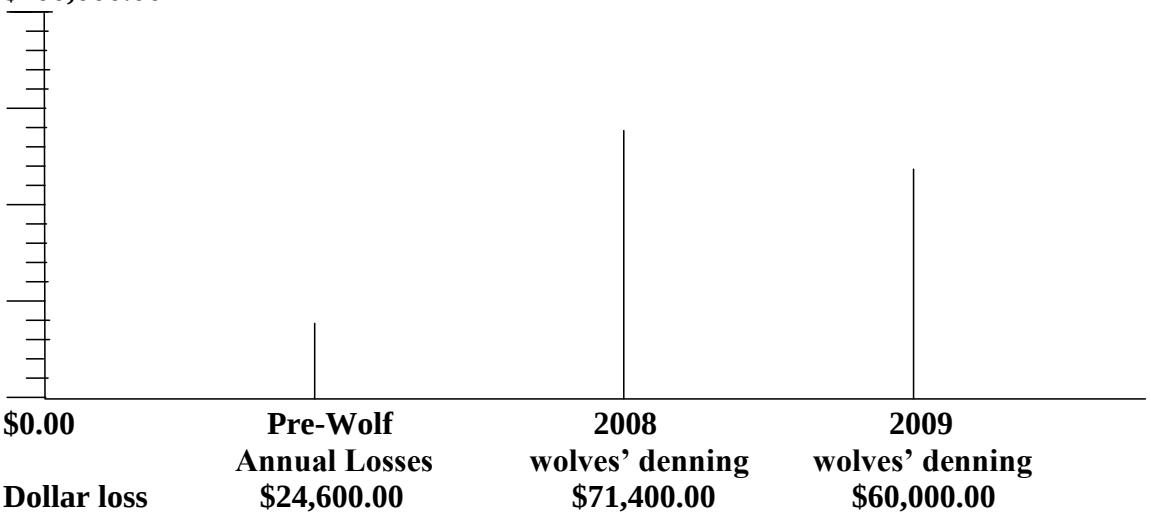
2008, Compensation was for 1 confirmed wolf killed calf at 100% market value = $600.00, paid by Defenders of Wildlife.

2009, Compensation of $900.00 was denied to resource owner by Defenders of Wildlife. The stated reason was that the resource owner did not conform to changing his husbandry scheme as requested by USFWS to prevent wolf-livestock interactions. The USFWS wanted the resource owner to corral his calves and let the cows out during the day to pasture, and then herd them into the corral at night so the calves could suck the cows. Also, the rancher was to feed the cows hay at night. The resource owner refused this suggestion and was penalized for failure to obey the USFWS.

The combined actual calf losses above pre-wolf average annual losses for Ranch A for 2008 and 2009 were 219.0 head X $600.00 = $131,400.00 loss value.

$ 131,400.00 loss value - $600.00 compensation value paid by Defenders of Wildlife = $ 130,800.00 total loss beyond pre-wolf normal losses.

Graph - Dollar Loss - Ranch A



Wolf denning loss is additional to pre-wolf dollar loss.

USFWS John Oakleaf study (2003) states that for every (1) one confirmed wolf-calf depredation there are (7) seven more wolf killed calves that are not found by the resource owner.

Oakleaf study ratio of 1 to 8 applied to Ranch A:

2008 - All confirmed, probable, possible- 1 – 1 X 7 = 7 not confirmed
1 divided into119.0 = 119.0
Ratio 1 to 119.0

2009 - All confirmed, probable, possible – 2 – 2 X 7 = 14 not confirmed
2 divided into 100.0 = 50.0
Ratio 1 to 50.0

Ranch B
Ranch B adjoins Ranch A.

Ranch B is a cow/calf operation. Records of average annual pre-wolf introduction calf losses were 2.455% for 3 years running with an average annual loss of 4.000 to 6.000 head per annum. The herd consisted of 256 head. Herd makeup: 18 bulls, 30 replacement heifers (not expected to calve), 5 steers and 203 production cows. Average calf crop = 97.5%. Losses pre-wolf were attributed to calving, open cows, coyote predation, and winter weather.

2008, the San Mateo Pack denned near calf core areas on Ranch B. Herd makeup: 18 bulls, 5 steers, 30 replacement claves (not expected to calve) and 203 production cows. Fall calf crop numbers were 171.0 head.

203 production cows – 5.0 head pre-wolf calf loss = 198.0 calves – 171.0 fall calf crop numbers = 27.0 additional calf crop loss.

Fall calf crop numbers dropped from 198.0 head to 171.0 head, representing an additional 13.5% loss beyond normal pre-wolf losses.

Monetary loss = 13.5% calf loss with wolves' denning in calf core area, 27.0 X $600.00 = $16,200.00 additional dollar loss with no compensation.

2009, the San Mateo Pack denned near calf core areas on Ranch B. The herd consisted of 287 head. Herd makeup: 19 bulls, 25 replacement claves (not expected to calve) and 243 production cows.

With wolves denning in calf core areas, calf losses increased to 23.895% with losses of 58.0 head.

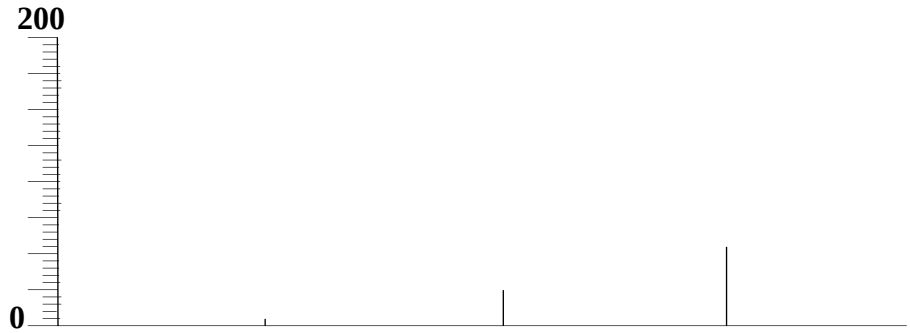
243 production cows – 6.0 head pre-wolf calf loss = 237.0 calves – 179.0 fall calf crop numbers = 58.0 additional calf crop loss.

Fall calf crop numbers dropped from 238.0 head to 179.0 head, representing an additional 23.845% loss beyond normal pre-wolf losses.

Monetary loss = 23.845% calf loss with wolves' denning in calf core area, 58.0 X $600.00 = $34,800.00 additional dollar loss with no compensation.

Of the 58.0 additional losses, a portion of the decrease is attributed to the harassment by wolves disrupting the breeding cycle[6].

Graph - Calf Loss - Ranch B



Wolf denning losses are additional to pre-wolf losses

The findings of investigations by USFWS, Wildlife Services and Catron County utilizing AMOC set standard for wolf depredation confirmation were:

2008: wolf depredations = calf confirmed 1, calf probable 1, calf injuries confirmed 3 (no compensation)
2009: wolf depredations = calf confirmed 1

[6] Idaho Wolf Depredation Compensation Plan (2004 Grazing Season) excerpt: "Some scientific data also suggests that further effects of wolf predation include stress-related loss of body condition in harassed herds and subsequent decreases in pregnancy rates and weaning weights". (Stricklin and Mench, 1989)

Defenders of Wildlife compensation Rate (there was no contact between Ranch B and Defenders of Wildlife; compensation was not paid):

Confirmed at 100% market value
Probable at 50% market value
Possible at 00% market value
Unknown at 00% market value

2008
Confirmed: 1 – calf = $600.00
Probable: 1-- calf = $300.00
Possible: 0 - = $ 000.00
Injury: 3 – calves = $000.00
Unknown: 0 – calves = $ 000.00
Total = $900.00

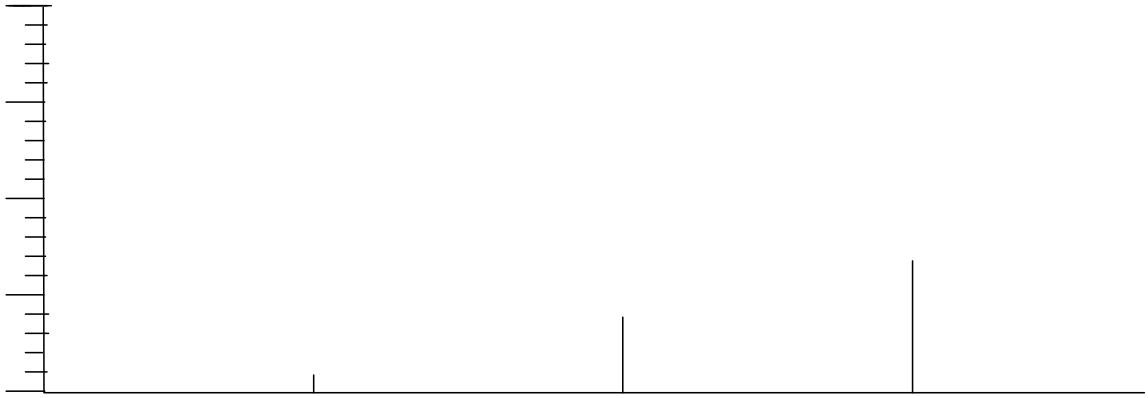
2009
Confirmed: 1– calves = $ 600.00
Probable: 0- = $ 000.00
Possible: 0– = $ 000.00
Unknown: 0 – = $ 000.00
Total $ 600.00

Total 2008 = $900.00
2009 = $600.00
Total $1500.00

2008 and **2009** combined calf loss with wolf presence; 85.0 head above pre-wolf average annual losses. 85.0 head X $600.00 = $51,000.00 additional loss value.

$ 51,000.00 loss value – $0000.00 compensation paid by Defenders of Wildlife = $51,000.00 non-compensated additional livestock loss value.

Graph - Dollar Loss - Ranch B



Wolf denning loss is additional to pre-wolf dollar loss.

Oakleaf study ratio of 1 to 8 applied to Ranch B:

2008 - All confirmed, probable, possible = 2 – 2 X 7 = 14
2 divided into = 27.0 = 13.50
ratio 1 to 13.508

2009 - All confirmed, probable, possible = 1 – 1 X 7 = 7
1 divided into = 58.0 = 58.0
Ratio 1 to 58.0

Ranch C
Ranch C is located approximately 35 miles as the crow flies in a southerly direction from Ranch A and Ranch B.

Records show that Ranch C had a 3% average annual pre-wolf introduction loss. Total herd is 330 head. Herd makeup: 18 bulls, 0 steers, 30 replacement heifers (not expected to calve), and 282 production cattle. Average annual pre-wolf losses of 8.46 head per annum were noted. Fall calf crop numbers were 231 head representing an 81.9% calf crop. Losses were attributed to birthing, coyote depredations, open cows, and winter weather.

2005, the Luna Pack denned in calf core areas on Ranch C[7]. Herd makeup: 18 bulls, 0 steers, 30 replacement claves (not expected to calve) and 282 production cows. Fall calf crop numbers were 231 head.

282 production cows – 8.46 head pre-wolf calf loss = 273.5 calves – 231.0 fall calf crop numbers = 42.0 additional calf crop loss.

Fall calf crop numbers dropped from 273.5 head to 231.0 head, representing an additional 15.0% loss beyond normal pre-wolf losses.

Monetary loss = 15.0% calf loss with wolves' denning in calf core area. 42.0 X $600.00 = $ 25,200.00 additional dollar loss with no compensation.

2006, the Luna Pack denned in calf core areas on Ranch C. Herd makeup: 20 bulls, 0 steers, 15 replacement claves (not expected to calve) and 295 production cows. Fall calf crop numbers were 204 head.

295 production cows – 9.0 head pre-wolf calf loss = 286.0 calves – 204.0 fall calf crop numbers = 82.0 additional calf crop loss.

Fall calf crop numbers dropped from 286.0 head to 204.0 head, representing an additional 28.0% loss beyond normal pre-wolf losses.

Monetary loss = 28.0% calf loss with wolves' denning in calf core area. 82.0 X $600.00 = $ 49,200.00 additional dollar loss with no compensation.

2007, the Luna Pack denned in calf core areas on Ranch C. Herd makeup: 21 bulls, 0 steers, 0 replacement claves (not expected to calve) and 309 production cows. Fall calf crop numbers were 231head.

309 production cows – 9.0 head pre-wolf calf loss = 300.0 calves – 231.0 fall calf crop numbers = 69.0 additional calf crop loss.

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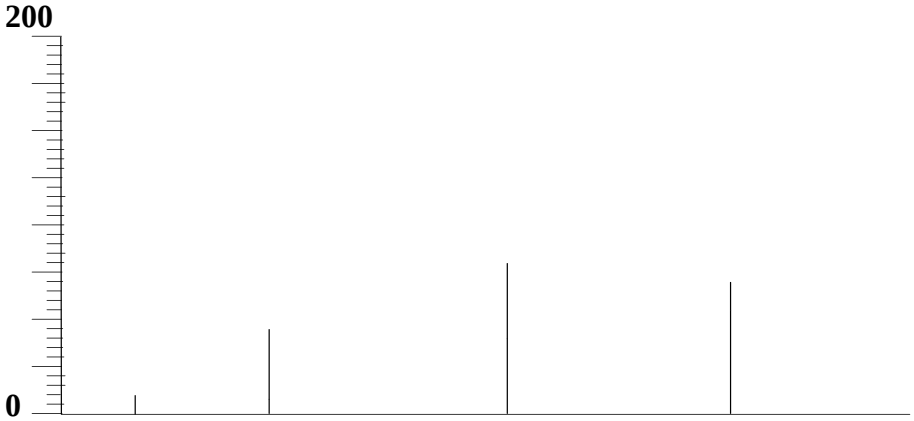
[7] Merkle, Jerod et al. 2009. *Summer diet of Mexican gray wolf (Canis lupus baileyi).* Study excerpt: "In 2005, the researchers say that the Luna pack consumed 52.7 percent of their diet as cattle and 45.9 percent as elk. The following year, the pack ate 24.1 percent of their diet as cattle, and 75.1 percent as elk."

Fall calf crop numbers dropped from 309.0 head to 231.0 head, representing an additional 22.0% loss beyond normal pre-wolf losses.

Monetary loss = 22.0% calf loss with wolves' denning in calf core area. 69.0 X $600.00 = $ 41,400.00 additional dollar loss with no compensation.

Graph - Calf Loss - Ranch C



.	Pre-Wolf Losses	2005 wolves' denning	2006 wolves' denning	2007 wolves' denning
Calf loss	**9.0 head**	**42.0 head**	**82.0 head**	**69.0 head**

Wolf denning losses are additional to pre-wolf losses

Ranch C combined losses for 2005, 2006, and 2007 were 190.0 head beyond pre-wolf annual losses. 190.0 head X $600.00 = $ 115,800.00 additional loss.

On Ranch C, the findings of investigations by USFWS, Wildlife Services and Catron County utilizing AMOC set standards for wolf depredation confirmation were:

2005: wolf depredations = confirmed -1 colt, 3 calves, probable -1 calf,
Injuries confirmed -1 horse, unknown 4 calves

2006: wolf depredations = confirmed -2 calves, probable – 5 calves, possible – 1 calf, unknown – 4

2007: wolf depredations = confirmed -4 calves, probable – 0, possible – 2 calf, unknown – 4

Defenders of Wildlife compensation Rate

Confirmed at 100% market value
Probable at 50% market value
Possible at 00% market value
Unknown at 00% market value

2005
Confirmed: 1 – colt = $ 1,000.00

3 – calves = $ 1,800.00
1 – Injury - horse = $ 2,500.00 sold by resource owner for $ 125.00
Probable: 1- calf = $ 300.00

Possible: 0 - = $ 000.00
Unknown: 4 – calves = $ 000.00
Total $ 5,600.00

2006
Confirmed: 2 –calves = $1,200.00
Probable: 5 - calf = $1,500.00
Possible: 1 – calf = $ 000.00
Unknown: 4 –calves = $ 000.00
Total $ 2,700.00

2007
Confirmed: 4 – calves = $ 2,400.00
Probable: 0- calf = $ 000.00
Possible: 2 – calf = $ 000.00
Unknown: 4 – calves =$ 000.00
Total $ 2,400.00

Total compensation value = $ 10,700.00

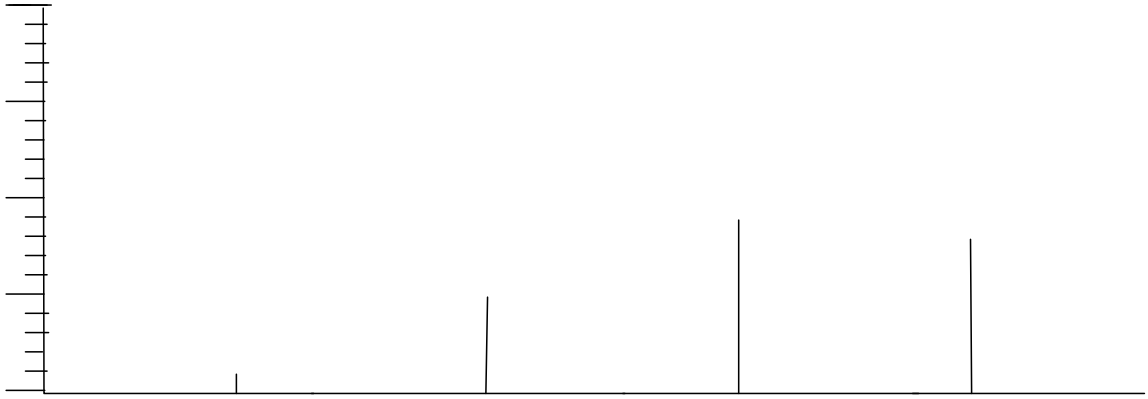
Total compensation paid to Ranch C by Defenders of Wildlife = $ 00.00

The combined actual calf losses beyond pre-wolf annual losses for Ranch C in 2005, 2006, and 2007 were: 193.0 head X $600.00 = $ 115,800.00 loss value.

$115,800.00 loss value – $0000.00 compensation paid by Defenders of Wildlife = $115,800.00 non-compensated additional livestock loss value.

Graph - Dollar Loss - Ranch C

$100,000.00



$0	**Pre-Wolf Annual Losses**	**2005 wolves' denning**	**2006 wolves' denning**	**2007 wolves' denning**
Dollar loss	**$5,076.00**	**$25,200.00**	**$49,200.00**	**$41,400.00**

Wolf denning loss is additional to pre-wolf dollar loss.

Comment: June 2006, Craig Miller of Defenders of Wildlife (a pro-wolf organization) at an AMOC meeting at the Honda Casino in Arizona announced that his compensation fund was to purchase tolerance and those who were not tolerant would be finding it harder to be compensated. Several ranches received no

compensation on livestock depredation investigations conducted by Wildlife Services for documented; confirmed or probable losses. The failure of DOW to pay these legitimate claims cost the resource owner thousands of dollars. These DOW compensation denials appear to be selective and target New Mexico ranchers.

USFWS John Oakleaf took claim forms and Wildlife Services reports to Defenders of Wildlife, still DOW refused to make compensation payment to Ranch C.

Oakleaf study ratio of 1 to 8 applied to Ranch C:

2005 - All confirmed, probable, possible – 4 X 7 = 28
4 divided into 42.0 = 10.5
Ratio 1 to 10.5

2006 - All confirmed, probable, possible – 8 X 7 = 56
8 divided into 82.0 = 10.25
Ratio 1 to 10.25

2007 - All confirmed, probable, possible - 6 X 7 = 42
6 divided into 69 = 11.5
Ratio 1 to 11.5

Note: In the fall of October 2007, Ranch C went out of business and the ranch was sold.

Ranch D
Ranch D is located to the west of Ranch C. When the livestock were removed from Ranch C the wolves immediately left the vicinity of Ranch C and dispersed to Ranch D where there were livestock.

Records show Ranch D had an 11% annual pre-wolf introduction loss. Total herd is 205 head. Herd makeup: 15 bulls, 0 steers, 10 replacement heifers (not expected to calve), and 180 production cattle. Average annual pre-wolf losses of 19.0 head per annum were noted. Losses were attributed to birthing, coyote, bear depredations, open cows, and winter weather.

2008, the Luna Pack denned in calf core areas on Ranch D. Herd makeup: 15 bulls, 0 steers, 10 replacement heifers (not expected to calve) and 180 production cows. Fall calf crop numbers were 125.000 head.

180.000 production cow numbers – 19.0 head pre-wolf calf loss = 161.0 calves – 125.0 fall calf crop numbers = 36.0 additional calf crop loss with wolf presence.

Fall calf crop numbers dropped from 161.0 head to 125.0 head, representing an additional 20.0% loss beyond normal pre-wolf losses.

Monetary loss = 20.0% calf loss with wolves' denning in calf core area, 36.0 X $600.00 = $ 21,600.00 additional dollar loss with no compensation.

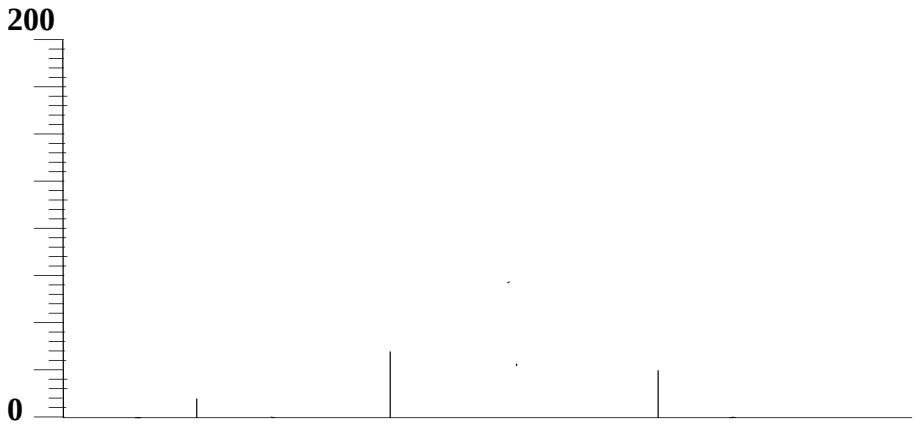
2009, the Luna Pack denned in calf core areas on Ranch D. Total herd 205. Herd makeup: 15 bulls, 0 steers, 20 replacement heifers (not expected to calve) and 170 production cows. Fall calf crop numbers were 128.000.

Note: Ranch D moved 65 production cows to another pasture several miles away from the denning wolves. This area contained no known wolves. Also a range rider patrolled the remaining 105 production cows at the original pasture where the Luna Pack again denned in 2009.

105.0 production cow numbers – 12.0 head pre-wolf calf loss = 93.0 calves – 70.00 fall calf crop numbers = 23.0 head additional loss with wolf presence.

This represents an additional 22.0% calf loss with wolf presence, 23.0 X $600.00 = $13,800.00 additional loss.

Graph - Calf Loss - Ranch D



Wolf denning losses are additional to pre-wolf losses

Defenders of Wildlife compensation Rate:

Confirmed at 100% market value
Probable at 50% market value
Possible at 00% market value
Unknown at 00% market value

2008
Confirmed: 0 = $ 0
Probable: 0 = $ 0
Possible: 0 = $ 0

Injuries confirmed wolf: 3 – calves = $ 0
Missing confirmed wolf: 2 – calves = $ 1,200.00
(2 calves missing with wolf presence, 3 wolf confirmed calf injuries at scene)
Unknown: 1 – cow = $ .00
Total $ 1,200.00

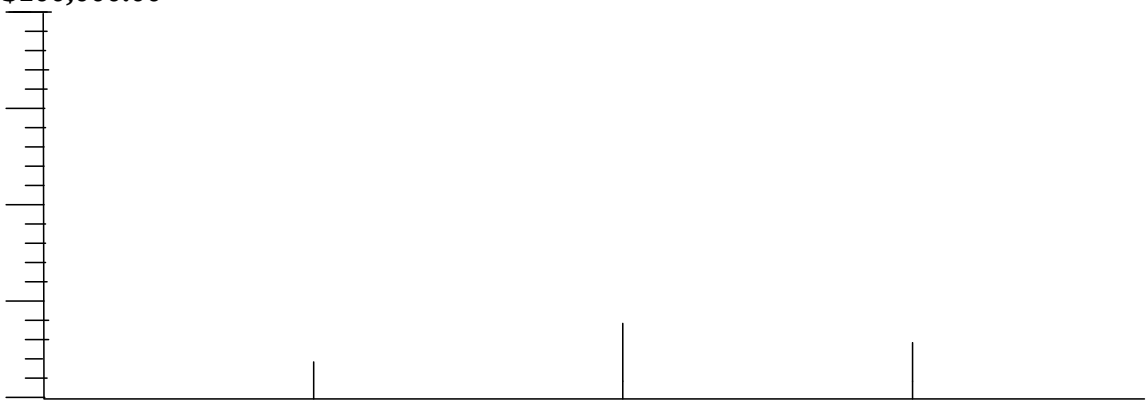
2009
Confirmed: 0 = $ 0
Probable: 0 = $ 0

Possible: 0 = $ 0
Injuries: 0 = $ 0
Unknown: 1 – cow = $ 0
Total $ 0

Total compensation $ $1,200.00. Amount paid by Defenders of Wildlife = $ 0

The combined actual calf losses above pre-wolf average annual losses for Ranch D in 2008 and 2009 were: 59.0 head X $600.00 = $35,400.00 loss value

Graph - Dollar Loss - Ranch D



Wolf denning loss is additional to pre-wolf dollar loss.

Oakleaf study ratio of 1 to 8 applied to Ranch C:

2008 - All confirmed, probable, possible – 2 X 7 = 14
2 divided into 35.450 = 17.725
Ratio 1 to 17.725

2009 - All confirmed, probable, possible - 0 X 7 = 0
0 divided into 22.450 =
Ratio 1 to 22.450

Ranch E
Ranch E is located north east of Ranch C and ran yearlings.

2009, the Middle fork Pack denned in yearling core areas on Ranch E. The Allotment consisted of three (3) pastures. There were 300 yearlings in excellent condition in pasture A and B, and 287 yearlings in pasture C. Average pre-wolf losses were 5.

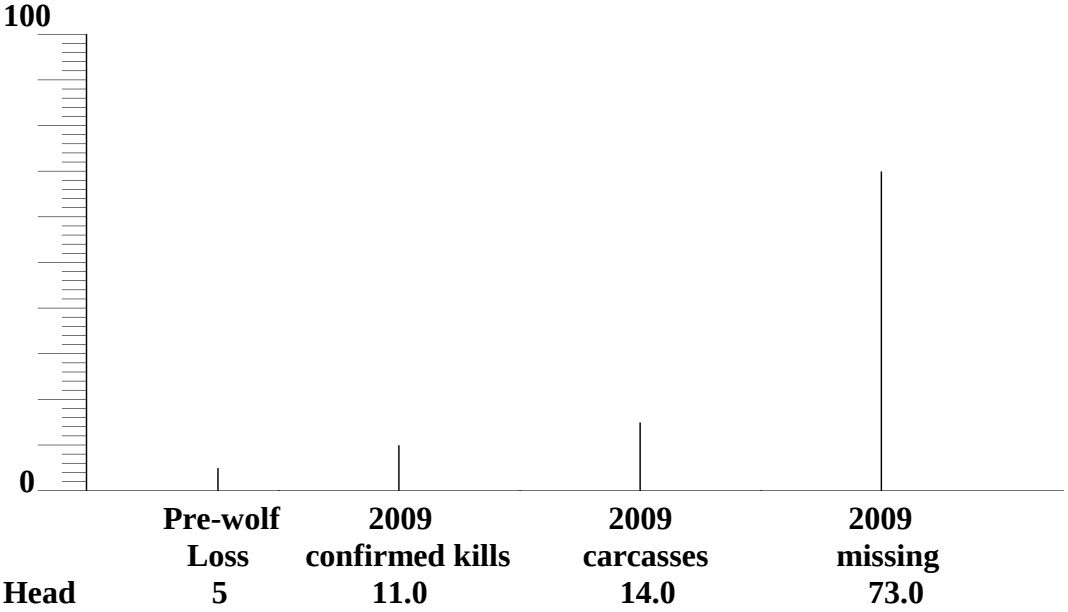
Pasture A, B, and C yearlings were run through fences by wolves chasing them. There were 10 confirmed wolf depredations, 14 carcasses found that were too far gone to investigate and 80 yearlings' location unknown. Many hours were spent by the resource owner mending fences and trying to locate and put livestock back in their proper pasture. The area is very remote and mountainous with thick tree covered canyons.

It has been documented on Ranch E that 4 of the 11 yearlings that were confirmed, attacked, and fed upon by the Middle Fork Pack were alive after the initial feeding. After the wolves fed, 36% of the yearlings traveled a long distance before being found alive or dead at the carcass site. Livestock have been found in the past with canine spreads and rake marks consistent with wolves but the scene lacked wolf presence and the finding of investigations were less than confirmed. Under these circumstances the results represent lost compensation to the resource owner.

Of the 80 missing yearlings, 7 yearlings were recovered in good health in the spring and were moved to the headquarters pasture on private property. On 04-27-10 one of the yearlings were attacked and its rear end eaten out, suffering a loss of approximately 20 pounds of tissue. The yearling was located 4 miles away from the attack/ feeding site that contained wolf tracks, blood trail and torn up ground. This yearling was a confirmed wolf kill by the Middle Fork Pack. The other six yearling had barbwire cuts on them from running into barbwire fences try to evade the wolves. No more yearlings have been found to date even though a rigorous search is ongoing.

Of the11 confirmed wolf depredations; 8 were heifers, 2 steers and 1 sex unknown.

Graph - Yearling Loss - Ranch E



Wolf denning losses

Defenders of Wildlife compensation Rate:

Confirmed at 100% market value;
Steers =.94c @ 650 lbs. = $611.00
Heifers =.87c @ 650lbs = $565.50
Probable at 50% market value
Possible at 00% market value
Unknown at 00% market value

2009:
Confirmed: steers = 2 = $1,222.00
heifers = 9 = $5,085.00
Probable: 0 = $ 0
Possible: 0 = $ 0
Injuries: 0 = $ 0
Unknown: = $ 0

Total $ 6,307.00

Total compensation amount $ 6,307.00.

Of the 80 yearlings missing, 7 were found resulting in 73 yearlings still missing.

11 confirmed wolf depredations
14 carcasses too far gone to investigate
73 missing
Total = 98

Total number of yearlings put on pasture = 887 – 98 head loss = 789
Percentage loss of herd = 11.048 %

Value loss:
Confirmed wolf depredations = 11 = $6,307.00
Carcasses too far gone to investigate = 14 X $565.50 = $7,917.00
Missing yearlings = 73 X $565.50 = $41,281.50
Total = $55,505.50

Graph - Dollar Loss - Ranch E

Wolf denning loss is additional to pre-wolf dollar loss.

Amount paid by Defenders of Wildlife = $6,307.00 – 55,505.50 = a total loss of =$49,198.50

Ranch E sold off their livestock in the fall of 2009 and did not stock the ranch in 2010 due to livestock losses.

Note of interest concerning yearlings: When wolves were not being supplementally fed the wolves returned to carcasses and continued to feed. After a supplemental feeding station was put out by the USFWS to feed the wolf pups (including dragging a confirmed wolf killed livestock yearling to the feeding station with the permission on resource owner) and thereby deter the Middle Fork Pack from continued livestock depredations, the wolves attacked and ate approximately 15 to 20 pounds out of the rear ends of each of four (4) yearlings. These yearlings survived the attack and traveled from the attack/feeding site. During this same period, although the wolves were heavily hazed from the yearling herd by USFWS and New Mexico Game and Fish

employees, the wolves would circle the hazers and make additional confirmed depredations. The Kill sequence interval averaged one every four (4) days.

Oakleaf study ratio of 1 to 8 applied to Ranch E:

2009 - All confirmed, probable, possible – 11 X 7 = 77
11 divided into 98 = 8.909
Ratio 1 to 8.909

The findings of confirmed and actual losses are consistent with other ranches across Catron County where wolves den in calf and yearling core areas. Very few livestock carcasses are found or found in a timely manner with evidence retained. When carcasses are found very few meet the standards for confirmation set by AMOC, due to lost evidence.

Many ranchers have cooperated with wolf recovery agencies utilizing recommended non-lethal schemes to prevent wolf-livestock interactions that result in livestock depredation. The ranches have added additional range riders, moved livestock to other pastures, penned livestock and fed hay and worked multiple additional hours to prevent wolves from killing their livestock. Still the wolves depredate their livestock. The ongoing added effort, stress and expense are a high loss cost factor beyond pre-wolf introduction.

Appendix B: Literature Cited

Idaho Wolf Depredation Compensation Plan (2004 Grazing Season)

Wolf-caused mortalities are difficult to detect in range livestock areas. Heavy cover, large pastures, great topographical variation and complete carcass consumption by wolves lend increasing degrees of difficulty to timely detection of wolf kills. The proportion of wolf-related depredations that go undetected or unconfirmed is unknown and will vary by area.

For example, two studies (Oakleaf, et. al., 2000 and Bjorge and Gunson, 1985) on cattle have shown that for every 5.8 or 6.7 cattle lost only 1 confirmed kill was noted. Given
this, the number of unconfirmed depredation losses attributed to wolves will always be a contentious issue.

Some scientific data also suggests that further effects of wolf predation include stress-related loss of body condition in harassed herds and subsequent decreases in pregnancy rates and weaning weights (Stricklin and Mench, 1989).

Cattle seeking to escape wolves may leave areas where they are supposed to be and disrupt grazing management plans. Economic losses and/or penalties from land management agencies could be the result.

For some ranchers, the cumulative effects of wolf predation may cause losses sufficiently severe that livestock production becomes untenable. Although the impact of wolf predation to the entire livestock industry of the state is expected to be small, the impact to the individual can be devastating.

USFWS John Oakleaf study on wolf-livestock depredations indicated for every confirmed wolf-livestock depredation there are (7) seven more that area not confirmed.

In Catron County there is evidence to conclude Mr. Oakleaf's findings are supported per wolves overlapping livestock areas, but differ when wolves den in calf/yearling core areas. In the case of Ranch A, Ranch B, Ranch C, Ranch D, and Ranch E the ratio is much higher than 1 to 8.

The Cost of Wolves to Ranchers

By Ron Skinner D.V.M.

Excerpt:

- Many animals that are killed are not found; one Idaho study showed one out of eight cattle killed is found.

- Stress is a significant problem for both animals and humans. Stress increases the cortisol level in the blood stream in both cattle and humans. Increased cortisol levels will cause pre-mature delivery of calves or abortion of calves. A direct result of this increased stress from wolves is that we are seeing a decreased pregnancy rate in our cattle.

- Cortisol also causes immune suppression as is commonly acknowledged in the medical field. Cortisol also causes recrudescence (bringing the virus from a dormant stage to an active stage). A virus in cattle called Infectious Bovine Rhinotrachitis (IBR) can recrudesce and causes abortion in cattle.

- It also causes fetal deformities, latent carriers, weak newborns, and sick newborns that die shortly after birth.

- With suppression of the immune system, other groups of organisms that can create diseases such as foot rot, pink eye, and pneumonia become active. These diseases often show up 48 to 72 hours after stress.

- There is injury to livestock from the wolves while they are chasing them. The wolves try to take animals down by biting and tearing at their hindquarters on the run. Some may get away but later die a slow death from gangrene.

- Stress on livestock producers is significant. The constant hunting for depredation and sick cattle is stressful.

- Cattle stressed at a young age do not grade choice at a high enough percent. This has been shown in numerous trials. In today's market that can cost $59.00 per head and varies with the time of the year and sometimes can be twice that. Another cost that the buyer must incur and another reason for him to decide he does not want your cattle.

- Another problem ranchers face is deciding how many replacement heifer calves to keep to offset the decreased pregnancy rates because of the wolves. The net cost of keeping extra replacement heifers back as the result of wolves is $603.25 per pregnancy loss. If there is a 5% increase in open cows, then a rancher with 500 cows will lose $15,081.25.

- Scott Creel, Montana State University, shows lower birth rates in the elk population in Yellowstone Park area due to wolves. Although partially due to wolf kills on the calves, Creel shows the largest factor to be nutrition. The elk are forced into areas without good feed by the wolves and to compound that they eat 27% less now and are slowly starving to death. This means the elk are choosing survival over reproduction and that is simply not sustainable for any population over the long run. We see this same scenario with ranchers and their livestock.

Wolf-Caused Stress (various sources)

The regular presence of wolves in close proximity to livestock may result in a chronic stress situation for the domestic animals. Many infectious diseases result from a combination of viral and bacterial infections and are

brought on by stress (Faries and Adams 1997). Wolves chase ungulates much more frequently than actual kills are made as part of the testing of the prey (MacNulty 2002). While wild ungulates are probably well adapted to being occasionally tested by predators, domestication and genetic
selection for docility in livestock has likely resulted in animals more susceptible to increased stress from predator harassment.

Stress can result in increased susceptibility to disease and weight loss, reduction in the value of the meat, and interfere with reproduction (Fanatico 1999). Stress
prior to slaughter is thought to be a contributor to "dark-cutters," meat which is of unacceptable color not being the normal bright cherry red but rather almost purple. Dark-cutters are discounted severely because these meat products are difficult to sell (Fanatico 1999).

In addition, the stress of being repeatedly chased/harassed by predators can cause cattle to abort, calve early or give birth to a weak calf (Dr. Gregory Palmquist, personal communication).

Wolf-caused livestock Stress Death in Catron County

Catron County brought to the attention of Wildlife Services that wolves were causing stress deaths in livestock. Case AP-030, 08-24-06 was the first case of stress death confirmed by Wildlife Services and Catron County. I also requested a study be done by Wildlife Services concerning livestock stress deaths on 11-01-06.

Pathological Fatigue

In this case it would be the over exertion of cattle by wolf harassment, chasing, and prey testing. The wolf attack would also produce extreme fear or fright in cattle.

Pathological Fatigue interferes with the activity of every gland in the cows system; its principle effect is to destroy the capacity of muscles and nerves to perform the work natural to them. A chemical change takes place in the muscles; these toxic substances are #1. Lactic Acid, #2. Creatine, and #3 Carbon Dioxide. These toxic substances are acids and cause a state of fatigue in the cow's muscles and system.

During rest following fatigue, these acids are neutralized by alkaline of the blood and internal secretions, which restores freshness, strength and tone of the muscle.

I conclude, once a cows system has been saturated to a certain point, "beyond recovery" of these toxic substances, there is no ability for the cows system of neutralization (alkalinity) and the cows system shut down and it dies.

I have seen healthy cows in prime condition just seem to fall over dead; lying on their sides there is no indication of head movement or leg movement, no sign that the hooves disturb the ground or ground liter at all. Some had wolf capture bite sites, some not.

Case AP-030, 08-24-06 was the first case of stress death recognized and documented by Wildlife Services in Catron County. The 1200 pound Black Angus cow was 6 years old and in good health, ear tag #208. Cow was pursued and attacked by wolf F924. This collared female wolf weighed approximately 45-50 pounds and was documented by Ariel Telemetry 250 yards away from the carcass on the side of a hill. The cow had been run by F924 in the pasture, ending where the cow was running around in circles. The pasture looked like a race track with the cow's hooves tearing up the ground and up-rooting vegetation. There were non-lethal bite sites with corresponding hemorrhage on the cow's tail from the root of the tail down approximately twelve inches. Canine spreads were documented at; 41.00mm and 39.89mm consistent with the Mexican wolf. Some cattle are stressed to death and there are no capture bite sites or feeding on the carcass.

In Manitoba, wolves and coyotes are able to spatially and temporally coexist with each other (Paquet, 1992)
Wolves did not always consume the entire ungulate carcass: 91% of elk kills were abandoned before all of the edible portions were eaten and 86% of moose remained only partially eaten.

In this study, all wolf-killed carcasses were visited by coyotes, in most instances the carcass was scavenged by these coyotes.

Another key factor in considering the consumption habits of wolves, when ungulate abundance is high enough they do not have to devour all of the ungulate, they can leave some.

Moose calves and yearlings were the primary targets of the attacks in Ballard et al.'s (1987) study, as wolves prefer to prey on the weakest members of any ungulate herd.

The Mexican Wolf (Canis lupus baileyi): A Historical Review and Observation On Its Status and Distribution
A Progress Report to the U.S. Fish and Wildlife Service by Roy T. McBride Completed March, 1980

Excerpt:

Wolves in Mexico do not appear to be scavengers, nor do they appear to feed upon sick, wounded or crippled animals. Contrarily, the wolves feed upon and prefer top-of-the-line animals (Figs 16 and 17).

When cattle are weaned, a percentage of young calves usually do not adjust easily, responding with much slower growth and generally poorer condition than the other calves. These animals, when being driven to the pen, usually drop to the rear and have to be pushed along, while the healthier calves get far ahead in the drive.

The same occurs during attack by wolves. The cattle stampede and during the chase the "Sanchos" (poor calves) drop to the rear and present easy targets for the wolves. However, the wolves pass by these cattle and take better, heavier
calves even though it is more of a struggle to kill them. **At times large chunks are bitten from the steer's hindquarters or flanks (Fig. 18). Wolves do feed at times without killing the steer, although these steers invariably die.**

Even though some stricken cattle were still alive the second night the wolves did not feed upon them but returned to catch another steer. At times wolves kill three to four animals in the same night but only feed on one. This habit makes them a hated enemy of the cattlemen.

In Mexico, the wolf seems to totally ignore the coyote, while the coyote takes great interest in where the wolf has been. I have frequently seen coyote tracks following wolf tracks in the opposite direction, probably intent in finding a kill.

When a wolf is killing steadily in an area there is invariably a swarm of coyotes, ravens, and eagles taking advantage of the remains of kills.

Study; Blue Range Wolf Recovery Area
Merkle, Jerod et al. 2009. Summer diet of Mexican gray wolf (Canis lupus baileyi).

Excerpt:

In 2005, the researchers say that the Luna pack consumed 52.7 percent of their diet as cattle and 45.9 percent as elk. The following year, the pack ate 24.1 percent of their diet as cattle, and 75.1 percent as elk

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Summer Diet of the Mexican Gray Wolf (Canis Lupus Baileyi)
By Jerod A. Merkle, Paul R. Krausman, Dan W. Stark, John K. Oakleaf, and Warren B. Ballard. The Southwestern Naturalist 54(4):480–524 December 2009

Excerpt:

Calving by cattle takes place year around, but peaks during spring and summer,
and parts of the Blue Range Wolf Recovery Area do not support cattle in winter. These grazing dynamics may account for the increase in biomass of cattle in scats in our study relative to results reported by Reed et al. (2006).

All territories of packs of Mexican wolves' overlapped active cattle-grazing allotments during our collection period (i.e., summer). However, grazing takes
place seasonally or year around throughout the Blue Range Wolf Recovery Area due to a climate gradient.

We detected a difference in diet between grazing areas, but the difference was driven by one pack. The Luna pack consumed a significantly higher amount of cattle than all other packs in the study area.

One potential hypothesis for the observed diet of the Luna pack is decreased predation on cattle in areas where they were not consistently exposed to cattle as a potential prey item. Younger calves (i.e., more vulnerable cattle; Oakleaf et al., 2003; Chavez and Gese, 2005) are likely more consistently present on year-around grazing allotments relative to seasonal grazing patterns, possibly subsidizing diet of the Luna pack.

These results suggest that significant wolf-livestock issues may be pack specific, and that further research is needed.

Studies addressing the following questions may elucidate impacts of different cattle grazing regimes on diet of the Mexican wolf.

Are there a higher proportion of cows with young calves on grazing allotments occupied by packs that consume livestock?

Does a higher proportion of calving take place on territories of wolves that consume more livestock compared to other territories of wolves?

Finally, what are the ages of cattle stocked on allotments occupied by territories of wolves that consume more livestock compared to other territories of wolves?

With a better understanding of predation by wolves and grazing dynamics of livestock, improved management decisions regarding successful conservation of Mexican wolves can be made.

Mexican Wolf Recovery
Collateral Damage Identification
Catron County

Jess Carey
County Wolf Interaction Investigator

February 27, 2011

Mexican Wolf Recovery

Collateral Damage Identification

Catron County, New Mexico

By Jess Carey, County Wolf Interaction Investigator
February 27, 2011

CASE # AP-226

Wolves fed upon cow while alive, 20 + pounds of muscle tissue eaten out around back end and pelvis. Wolves leave; cow stressed and tries to birth calf. Calf found half way out dead not fed upon by wolves; cow could not stand and was put down. This is a typical confirmed wolf depredation.

Foreword

When I looked for a title for the following factual wolf information, I had to look at the folks most impacted by Mexican Wolf Recovery. Many rural family ranchers have lost their peace of mind, lost their dreams, lost their pursuit of happiness, lost their livestock and lost their ranches. Collateral Damage Identification seemed appropriate. All damage was due to non-compensated wolf caused livestock losses, a "taking" by Federal wolves administered by Federal agencies and our own New Mexico Department of Game and Fish. These agencies will and have push Mexican Wolf Recovery forward knowing that their wolves are destroying family rancher's ability to survive, in the end selling off their ranches. In fact, lost family ranchers are collateral damage to achieve Mexican Wolf Recovery.

The purpose of the contained information is for you to be able to indentify wolf presence in your area. People that do not have wolves on them yet and people who live outside the Mexican Wolf Recovery Area (BRWRA) are unaware of what to look for to identify wolf activity. Wolves travel a long distance and could be in your area. Unidentified depredations on livestock, killed pets and farm animals could be wolf interactions attributed to other causes.

Un-collared wolves have dispersed from the Blue Range Wolf Recovery Area (BRWRA) to other counties and parts of the State of New Mexico and Arizona. Look at the wolves put into the Yellowstone National Park, within a few years wolves dispersed from Yellowstone into Wyoming, Idaho, Montana, Oregon, Washington, and Colorado.

Un-collared Mexican wolves have had 12 years to disperse into other parts of the state of New Mexico. Breeding and having offspring with other un-collared wolves, they in turn repeat the process. This is part of the hidden strategy of Mexican Wolf Recovery they do not talk or tell you about. This is also why the USFWS do not collar all wolves. The US Fish and Wildlife Service and the New Mexico Department of Game and Fish (the lead wolf recovery agency in New Mexico) are depending on un-collared wolf dispersals to saturate New Mexico and Arizona with wolves. The information in this document should help you identify wolf activity and who to call for an investigation to document wolf activity.

It is clear that wolf recovery agencies are managing family ranchers and not wolves. Now, the US Forest Service has entered Mexican Wolf Recovery big time and will be putting all types of wolf directives on the permitted grazing allotments.

Wolf agencies will tell you they have a solution for depredating livestock killing wolves or habituated wolves who seek our humans and human use areas. Habituated wolves lack an avoidance response to humans and are bold, and fearless. Habituated wolves come to your home and in your front yard where your children play.

Non-positive wolf agency solutions for problem wolves are; hazing wolves away, supplemental feeding (to stop wolves from killing livestock), flaggery (flags on a shocking wire), and bang/rag boxes (to scare wolves). Some non-lethal schemes may work short term, but do not solve the problem of wolves killing livestock or cure flawed habituated wolves. What these non-lethal schemes do accomplish is give the wolf agencies something to write down in their reports to show their upper bosses that they have attempted to fix the problem knowing full well they will fail and prolong the problem.

here is only one positive cure for problem wolves and that is to remove them….period

How Much Do Family Ranchers Loose to Mexican Wolves?

Comparability Study Synopsis

This study consist of five ranches A, B, C, D, E, located within the Blue Range Wolf Recovery Area in Catron County, New Mexico. These ranches were identified as having wolves denning in and or near calf/yearling core areas. Prior to this study the relationship between high calf loss rate and proximity of denning wolves was not understood. It was also not realized that coyotes swarm to areas where wolves are continually killing livestock, contributing to the removal and destruction of evidence of the remains. Of the five ranches; four are cow/calf operations and one a yearling operation. All five ranches share a constant factor: Mexican wolf packs denning in and or near calf/yearling core areas.

Confirmed and probable findings do not reflect the true number of livestock losses. The information provided in this document indicates the true livestock loss and effects on family ranchers for sustainable economic viability. The final analyses indicate that annual post-wolf introduction losses are higher than the average annual pre-wolf losses for the five study ranches:

- **Total combined livestock losses = 651.0 head,**
- **Total combined dollar value losses = $ 382,198.50**

In this comparability study, two of the five ranches went out of business; one selling the ranch and the second is on the market now. A third ranch sold off their livestock in the fall of 2009 and did not re-stock cattle in 2010.

Wolf-caused stress disrupts a cow's breeding cycle; the resulting calf loss must be measured in monetary value as if the wolf depredated a calf. To alleviate the taking of private property without compensation by the Federal Government, confirmation standards and the compensation scheme as a whole must be reevaluated. In-depth studies must be conducted to evaluate the negative impacts of wolves' denning in calf/yearling core areas and the effects of wolf-related stress on livestock. Evaluation of data must include the wide spectrum of negative impacts to livestock and livestock producers, rather than the current focus solely on benefits to wolves. Recommended areas of study include:

1. **Pre-wolf introduction historic annual losses;**
2. **Post-wolf introduction annual livestock losses;**
3. **Wolves denning in calf/yearling core areas;**
4. **Wolves denning near calf/yearling core areas;**
5. **Wolf rendezvous sites located in calf/yearling core areas;**
6. **Wolf-claimed territory overlapping livestock core areas; and**
7. **Wolf-caused chronic stress and effects on livestock and producers.**

Negative effects beyond wolf-caused mortality

The negative effects to livestock producers caused by Mexican Wolves are a wide spectrum not addressed and/or ignored by the US Fish and Wildlife Service. Prior negative data and documentation of wolf recovery from other states were not utilized to mitigate the same negative effects of Mexican wolf recovery in New Mexico and Arizona.

Wolves continually killing, prey testing in a herd produces chronic wolf stress in cattle. Chronic wolf-caused stress in cattle leads to loss of body condition, cows birthing weak calves, pre-mature birth of calves, abortion of calves, immune suppression, decreased pregnancy rates-open cows, increased susceptibly to disease, weight loss, and wolf attacks alter the demeanor of cows from docile to aggressive.

1. **True livestock losses are not reflected in confirmed and probable investigative findings;**
2. **Few livestock depredations are actually compensated;**
3. **Cumulative effects of wolf predation makes livestock production untenable;**
4. **Impact on individual family ranchers is devastating, even though the impact to the entire livestock industry of the state may be small;**
5. **Wolf depredation disrupts grazing management plans;**
6. **Increased uncompensated hours tending injured calves;**
7. **Increased uncompensated hours checking livestock;**
8. **Increased uncompensated hours mending fences when wolves attack/run livestock through them;**
9. **Increased uncompensated hours gathering livestock and returning to proper pasture;**
10. **Loss of market value for maimed and disfigured calves;**
11. **Loss of replacement heifers/production;**
12. **Loss of revenue while new herd takes several years to acclimate;**
13. **Loss of revenue while replacement heifers take three years to acclimate into an existing herd.**

Wolves Denning in Calf/yearling Core Areas Result In:

1. **Wolves subsistence on small calves;**
2. **High incidence of wolf depredation during the period when wolves were most active, i.e. providing sustenance to denning female and offspring;**
3. **Intensive localized wolf depredation of small calves;**
4. **After initial wolf gorging off calf and returning to the den, calf carcasses are scavenged and consumed by coyotes, requiring wolves to advance their frequent kill sequence;**
5. **Wolves' utilize 20 pounds per calf depredation, coyotes and scavenging birds utilize remainder of carcass;**
6. **Wolf killing steadily in an area invariably causes a coyote swarm to that area;**
7. **Few calf carcasses (as compared to adult cattle carcasses) are found for investigation;**
8. **Carcass remains are mostly consumed, scavenged, destroying evidence of depredation;**
9. **Handicapped wolves with missing limbs/feet target (prefer) livestock, as wild game is difficult to capture;**
10. **When wolves den on a ranch the USFWS blame ranchers for not preventing livestock depredations;**

11. **USFWS demands that ranchers change their entire husbandry scheme to accommodate the presence of wolves; if the rancher refuses, no compensation is paid on Wildlife Services findings on confirmed or probable livestock depredations by Defenders of Wildlife;**

12. **Ranchers cooperating with the USFWS wolf recovery agencies nevertheless continue to have livestock losses.**

The following information will educate the resource owner and the public on the negative aspects of Mexican Wolf Recovery, indentify wolf presence and recognize wolf depredations on livestock, pets, and farm animals so they can be investigated.

What do Mexican wolves look like?

Mexican wolves come in a variety of colors, sizes and display different behaviors. Most wolves are large in size, bigger than a German Shepard and weigh 70 to 90 pounds; some are smaller in size and weigh 45 to 50 pounds. The head of the wolf is blockier than a coyote and they have a broader nose than a coyote; also the ears are more rounded. The front feet are larger than the rear feet. Color ranges from a grizzled gray, reddish-brown, whitish mixture to reddish-brown. Look at photograph #1, these three wolves represents the typical coloration of Mexican wolves. The two outside wolves are gray in color; the one in the middle is very reddish-brown. This is why many people mistake Mexican wolves for coyote's when seen further than a 100 yards. Most wolves will stand and look at you, then move away slowly. Some habituated wolves will stand and look at you even after you fire a firearm into the air.

1. **3 of 5 wolves in calf core area; 3 confirmed calf depredations, 1 probable (photo Jeannie Jones)**

2. Luna Pack **(photo Jeannie Jones)**

3. Luna Pack **(photo Jeannie Jones)**

Wolf attacks on cattle

Wolves primarily attacked cattle on the hindquarters including tail, vulva, lower thigh,

hock, hamstring, and occasionally on the neck, face, and jaw, behind the front legs, in front of the rear legs, and on the belly. Wolf attack sites on cattle very, wolves continue to attack the way they have learned to capture cattle and all wolves do not attack at the same sites on the prey animal.

Wolves will run cows, calves, and yearlings stressing the animal until it cannot stand, normally there will be capture bite and rake marks on the skin with corresponding hemorrhage.

Livestock killed by predators usually can be distinguished from those dying from other causes by the presence of external hemorrhaging; subcutaneous hemorrhaging and tooth punctures; damage to the skin, other soft tissues, and skull; blood on the soil and vegetation; and carnivore tracks, scats, or territorial marks near dead animals. Urgent calling and alert, defensive, and frightened behavior of livestock also suggest that predators may have killed livestock.

Newborn livestock killed by predators and partially consumed can be distinguished from stillborn livestock by characteristics not found in stillborn animals: a blood clot present at the closed end of the navel, pink lungs that float in water, fat around the heart and kidneys, milk in the stomach and intestines, milk fat and lymph in the lymphatic vessels that drain the intestinal tract, a worn soft membrane on the bottom of the hooves, and possibly soil on the bottom of the hooves.

Normally, when wolves kill new calves there is little left of the carcass, possibly a few small bones or a piece of the skull but usually there is just a bloody place on the ground is all that remains. The calf is totally consumed including hooves. If a larger calf and there are remains left a lot of the time there are no capture bite sites. The reason is the calf is bedded and the wolf pins the calf down and the feeding begins, the wolf does not have to bite the calf to capture it.

Remains of calf – part of skull – wolves present

Remains of a calf – Wolf presence nearby– Cause of death, 'Unknown'

Wolves kill by consumption, they eat their victims alive and they die from stress, tissue and blood loss. In 233 wolf depredation investigations I have never documented a lethal bite site on cattle carcasses.

Confirmed Wolf Depredations on Livestock

In the following photographs you can see the results of wolf attacks on calves, yearlings, horse and cow's. This will give you an idea of what to look for.

View the carcass attack sites, feeding sites, bite sites and rake marks with corresponding hemorrhage. Some cattle are stressed down and the wolves eat 20 pounds from the victim and the injured cow, calf, or yearling is not dead and walks around with its rear end eaten out.

Your observations and action is key to indentify wolf presence and depredating wolves. Also, notification for an investigation will indentify un-collared wolves.

Calf still alive with massive tissue loss – San Mateo Pack denning between 2 pastures

Bull calf (350 pounds) attacked by 4 wolves, bite sites with massive hemorrhage

Skin off bull calf (above) held up to the sun, massive bite sites and rake marks on skin

Remains of calf – Middle fork Pack

One of five yearlings found walking around with massive tissue loss; Middle Fork Pack

Most cattle die at the feeding site, some survive after the wolves have eaten their fill. Still, the victim with massive tissue loss has to be put down by the resource owner. All wolf depredated livestock go through this "death by consumption".

Yearling walking around with massive tissue loss for six days, maggot infested wounds

Middle fork pack

Remains of horse in corral – seven wolves stripped all tissue from carcass

Wolves kill cattle by consumption producing blood loss, tissue loss and stress. In 12 confirmed wolf killed yearlings on one ranch, 5 did not die at the attack and feeding site. They traveled for some distance after being fed upon by wolves. Four yearlings were found alive and walking around with massive tissue loss. One yearling was found dead and the scene lacked evidence of an attack and feeding site. Dried blood found on the legs indicated the yearling was bleeding while standing upright and walking.

Lack of evidence at the carcass/found alive site; importance

There have been past cases where cattle were found with canine spreads and rake marks consistent with wolves and the scene lacked attack/feeding site, wolf tracks, wolf scats, blood trails, drag marks, ground/vegetation disturbance or ground telemetry. Some of these investigation findings were probable, possible or something other than wolf. In the

12 confirmed killed livestock by the Middle fork Pack in 2009, evidence indicates that these

5 yearlings were attacked and fed upon by wolves in one location and lived to travel for some distance before being found alive and or dead in another location.

Carcasses that lack wolf evidence at the scene should be investigated to determine that the victim did or did not travel from a wolf attack/feeding site. To determine the cause of death based on the best available evidence, canine spreads, rake marks with corresponding hemorrhage consistent with a wolf and evidence the victim traveled away from the attack/feeding site is vital.

Wolf Attacks on Pets

Dog scalped by wolves at home, chunks bitten out of back end, lucky to be alive

Dog killed in yard by wolves – leg bone crushed – massive hemorrhage

Jaw crushed by wolf attack in back yard

Wolf bites head off kitten in front of children

At the scene

Protecting fragile evidence

Canine tracks can be destroyed by people walking within the scene. Other livestock, scavenging birds can also destroy tracks etc. You yourself can destroy tracks if you do not take the precaution to look where you step. The best procedure when entering the scene to check a carcass is to protect the evidence such as canine tracks as you find them; cover these tracks to prevent other livestock/people from trampling them. Cover the carcass with a tarp rocked around the edges to prevent scavenging canines and birds from feeding on

it. Cover blood trails or droplets of blood leading to the carcass if rain is eminent. Timely carcass detection and notification is key to depredation investigations to determine the cause of death. Lost or destroyed evidence can result in a non-confirmation. Calf carcasses left uncovered in the field will disappear during the night. If you do not have a tarp, hang the calf high up in tree, if no tree mark the area and bring the calf in and store it so dogs cannot get to it.

Procedure: Investigating a Livestock Carcass

I want to discus the procedure of investigating livestock carcasses. Notification is given by the resource owner, or others that may have found a livestock carcass suspected of predator depredation. In Catron County, USDA Wildlife Services and I respond to the scene to perform an investigation to determine the cause of death of the animal.

Dirt roads are checked for predator tracks, scats and any sign of predators as you near the area of the carcass. If tracks are located on the roadway they are marked and protected so no one drives over them.

Other cattle in the pasture are observed for unusual behavior; calling and alert, defensive, and frightened behavior, injury bite sites, and impact wounds like running into barriers or barbwire fences.

The area is checked for a wolf collar signals using a ground telemetry receiver. If a signal or signals are picked up the corresponding wolf number is noted.

The scene around the carcass is searched to identify the attack site, feeding site, drag marks, tracks, scats, blood trails, trampled/uprooted vegetation, torn up ground, broken fences. The scene could be less than fifty to several hundred yards in size.

All scene evidence is photographed. Measurements are taken to document predator tracks and scats. A diagram is drawn to reflect attack and feeding site, drag marks, carcass site, blood trails, predator/victim track location and direction of travel. Check barbwire fence wire; bottom and second strands are checked for hair caught in the barbs when predators pass under or through them. A predator's identification can be made with this transfer evidence (hair).

The carcass is photographed; head, back, rear, and belly. Injuries; attack sites on the carcass, bite sites, feeding sites, impact injuries. Scavenging canines and birds are noted.

Once everything is documented the investigation focuses on the carcass and a necropsy is performed. The percentage of carcass remains is noted, as well as disarticulation of limbs and bones. Some carcass remains are just dried skin and bones; these have to be soaked in water 3 to 5 days to soften the skin, yet compression bite sites on the skin still remain. A compression bite site can only be made if the victim was bit while alive.

First the hair is clipped from the skin of the carcass to detect bite sites and rake marks. Without clipping the hair you cannot see the bite and rake marks. Photographed measurements of all canine spreads are documented. The skin is removed to document bite site corresponding hemorrhage, and deep hemorrhage in the mussel tissue and injuries. Most times there are no internal organs left inside the carcass for assessment. The skin is held up to the sun and photographed to document bites sites and rake marks with hemorrhage in the skin.

Example of a wolf confirmation:

Canine spreads are documented at; 42.50mm, 40.20mm, 39.60mm, 41.80mm with corresponding hemorrhage consistent with a Mexican wolf. Documented deep hemorrhage in mussel tissue, large femur bones are bitten into, wolf tracks at carcass site, wolf tracks in blood trail and drag marks. Wolf scat is documented 40 yards from carcass site. A 55

inch territorial wolf scrap is documented at a nearby tree. Ground telemetry signal received on wolf AF924 and wolf AM001. Based on the best available evidence the cause of death is a confirmed wolf depredation.

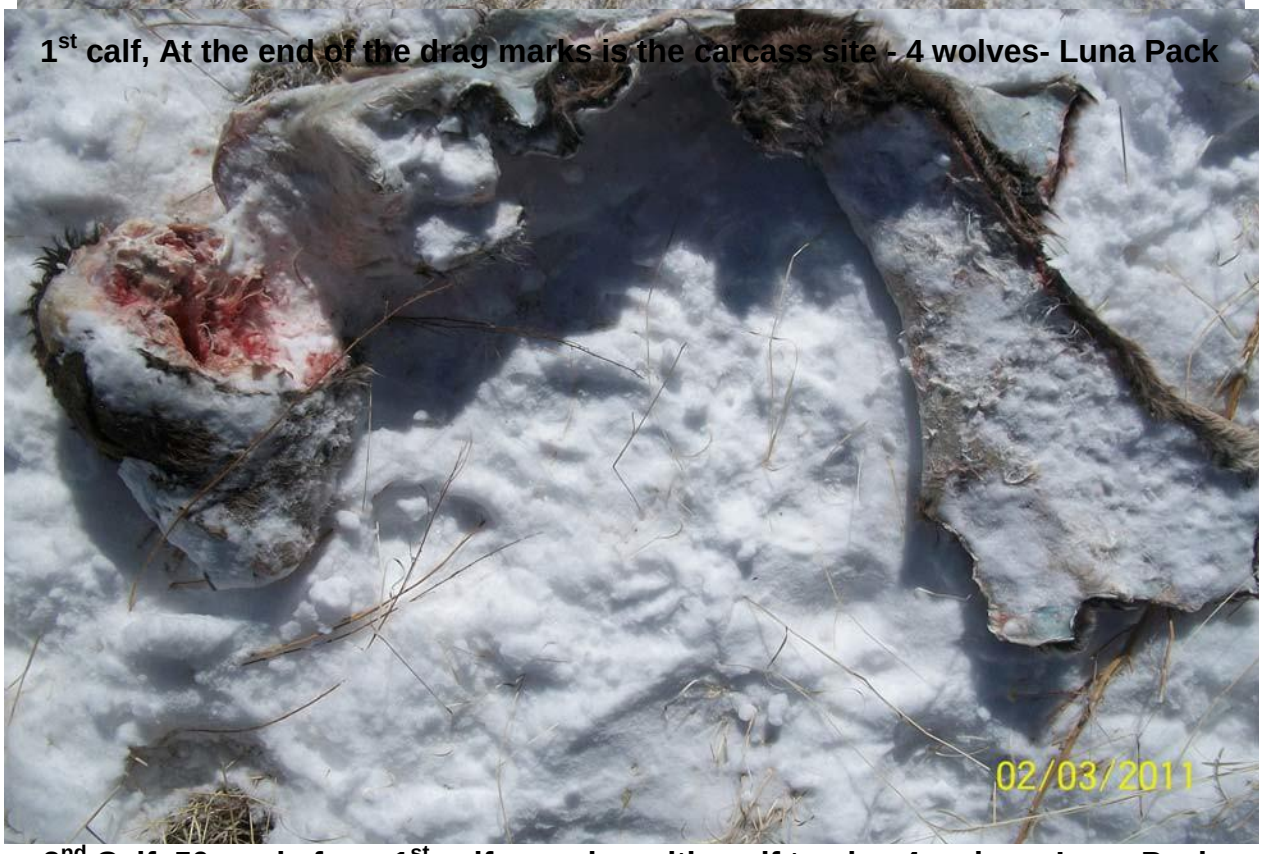
Running wolf tracks along side running cow and calf tracks

Results - wolves ran down calf leaving blood trail, feeding site, and drag marks

Luna Pack

1st calf, Attack site in snow, blood and wolf tracks, carcass drug 45 yards to carcass site

1st calf, At the end of the drag marks is the carcass site - 4 wolves- Luna Pack



2nd Calf, 50 yards from 1st calf, remains with wolf tracks- 4 wolves- Luna Pack

Wolf Scat Identification

Wolf scat is large, usually 1 1/8” or larger in diameter and measures 9” to 12” inches in length and black in color from eating meat and will contain hair and bone chips of its prey.

Wolf scat

Wolf Scat – toilet station

Wolf scat

Wolf scat at front door of residence

Wolf Tracks

Wolf tracks in snow 50 yards from a residence on private property

Wolf tracks with typical overstep – smaller rear foot overstep larger front foot

Wolf tracks – traveling gate – tracks in straight line

Domestic dog track and the dog – compare to wolf tracks

Dispersing Wolves

Example; M1039.

This male wolf was released into the Gila; it took off and was located in the San Mateo mountains, then crossed highway US 60 and went to Acoma, then to El Malapai then to Zuni where he was captured.

Ariel flight telemetry located M1039; 5 miles inside Arizona on a Monday, within 24 hours he traveled 76 air miles back to Mount Sedgwick in Grants New Mexico where he was again captured.

Dispersing wolves from the recovery area in Catron County, New Mexico and Arizona could have travel hundreds of miles throughout the state of New Mexico.

Contact Information

If you find any evidence of wolf presence in your area follow the above information and contact the following agency.

Cibola, McKinley Counties
USDA/Aphis Wildlife Services
Northern Supervisor, Ken Podborny – 505-346-2640
Jon Grant – 505-287-7838, 505-290-0518 cell

Sierra, Grant, Hidalgo, Luna, Counties
USDA/Aphis Wildlife Services
Southern Supervisor, Keel Price – 575-527-6980

Catron County
Jess Carey
County Wolf Interaction Investigator
575-533-6668
Sheriff Department – radio contact
575-533-6222
If you have any questions call or email me at; 3trees@gilanet.com

Jess Carey
County Wolf Interaction Investigator
HC 62 Box 1-8
Reserve, New Mexico
575-533-6668

Catron County Commission Hugh B. McKeen, Chairman 87830
P.O. Box 507
Reserve, New Mexico 87830
575-533-6423

Catron County Wildlife Investigator

Results of Investigations/Complaints

Jess Carey
County Wolf Interaction Investigator

May 20, 2012

Catron County Wildlife Investigator Results of Investigations/Complaints Report
***April 2006-April 2012*.**

WOLF-ANIMAL:

Case #	Date	Animal/Death/Injury	Attributed To	Conformation By CWII // WS	Land Ownership
AP-001	4-20-06	calf death	motor vehicle	confirmed	forest
AP-002	4-22-06	calf death	wolf	confirmed	forest
AP-003	4-22-06	cow death	calving	probable	private property
AP-004	4-22-06	cow death	unknown	unknown	private property
AP-005	4-24-06	calf/injury	wolf	confirmed	private property
AP-006	5-17-06	mare/injury	wolf	possible	private property
AP-007	5-18-06	farm animal stalking	wolf	possible	private property
AP-008	5-22-06	cow death	unknown	unknown	forest
AP-009	5-23-06	cow death	wolf	confirmed	private property
AP-010	5-25-06	calves/harassment	wolf	confirmed	private property
AP-011	6-04-06	calf death	motor vehicle	confirmed	forest
AP-012	6-08-06	calf death	bear	confirmed	forest
AP-013	6-10-06	cow death	calving	probable	forest
AP-014	6-12-06	cow death	unknown	unknown	forest
AP-015	6-13-06	cows/harassment	wolves	possible	private property
AP-016	6-12-06	calf/injury	wolf	probable	forest
AP-017	7-10-06	calf death	wolf	confirmed	forest
AP-018	7-11-06	cow death	unknown	unknown	forest
AP-019	7-12-06	cow death	unknown	unknown	forest
AP-020	7-15-06	calf death	wolf	confirmed/possible	private property
AP-021	7-18-06	calf death	coyote	confirmed	forest
AP-022	7-28-06	cow death	wolf	confirmed	forest
AP-023	7-31-06	1 dog death/1 injury	wolf	confirmed	private property
AP-024	8-08-06	heifer death	wolf	confirmed	private property
AP-025	8-11-06	cow death	bear	confirmed	forest
AP-026	8-15-06	calf death	motor vehicle	confirmed	blm
AP-027	8-17-06	calf death	wolf	confirmed	forest
AP-028	8-17-06	horse/injury	wolf	possible	private property
AP-029	8-21-06	calf death	natural	other	state
AP-030	8-25-06	cow death	wolf	confirmed	forest
AP-031	9-04-06	calf/injury	open case	calf could not be located	forest
AP-032	9-05-06	cow death	wolf	possible	forest
AP-033	9-19-06	cow death	motor vehicle	confirmed	state
AP-034	9-29-06	cow death	wolf	probable/ possible	private property
AP-035	10-31-06	kitten death	wolf	confirmed	private property
Ap-036	11-13-06	cow death	wolf	confirmed	forest
AP-037	11-16-06	cow death	wolf	possible	forest
AP-038	11-23-06	calf death	wolf	confirmed	private property
AP-039	11-28-06	sheep injury	wolf	possible/unknown	private property
AP-040	12-07-06	horse injury	wolf	possible	private property
AP-041	12-11-06	calf death	wolf	possible/ unknown	forest

AP-042	12-25-06	cat missing/wolf-human encounter	wolf	confirmed	private property
AP-043	01-09-07	horse death	wolf	confirmed	private property
AP-044	01-10-07	cow death(GPS study) confirmed wolf presence		possible	forest
AP-045	01-10-07	cow death (GPS study) confirmed wolf presence		possible	forest
AP-046	01-12-07	sheep injury	dogs	confirmed	private property
AP-047	01-18-07	Emu death & injury	coyote	confirmed	private property
AP-048	01-24-07	calf death	wolf	possible	forest
AP-049	01-24-07	cow death	wolf	possible	forest
AP-050	01-29-07	calf death (GPS study) confirmed wolf presence		possible	forest
AP-051	01-29-07	cow death (GPS study) confirmed wolf presence		possible	private property
AP-052	01-29-07	horse death	wolf	possible/unknown	private property
AP-053	01-30-07	pet dog injury	wolf	confirmed	private property
AP-054	01-31-07	cow death (GPS study) confirmed wolf presence		possible	forest
AP-055	01-31-07	calf death	wolf	confirmed/unknown to confirmed	forest
AP-056	02-01-07	cow death telemetry	wolf	possible	forest
AP-057	02-01-07	cow death	unknown	unknown	forest
AP-058	02-01-07	calf death	wolf	confirmed	forest
AP-059	02-12-07	calf injury	wolf	confirmed	private property
AP-059-S	02-22-07	calf died	wolf	confirmed	private property
AP-060	02-23-07	calf death	wolf	confirmed	forest
AP-061	02-23-07	cow death	wolf	possible	forest
AP-062	03-01-07	cow death	wolf	possible	forest
AP-063	03-01-07	calf death	coyote	WS investigation	forest
*AP-064	03-13-07	spike bull elk death	wolf	confirmed	entrance to private property
AP-065	03-17-07	bull death	unknown	unknown	forest
AP-066	03-23-07	dog injury	wolf	confirmed	private property
AP-067	03-29-07	calf death	wolf	possible	forest
AP-068	03-29-09	calf death	coyote	confirmed	state
AP-069	03-29-07	cow death	wolf	confirmed	state
AP-070	03-30-07	calf death(GPS study)confirmed wolf, no remains left-unknown			forest
AP-071	03-31-07	calf death	coyote	confirmed	forest
AP-072	04-01-07	cow death	natural	natural	forest
AP-073	04-01-07	calf death	wolf	confirmed	forest
AP-074	04-06-07	calf missing	wolf	possible	forest
AP-075	04-06-07	calf missing	wolf	possible	forest
AP-076	04-06-07	calf missing	wolf	possible	forest
AP-077	04-09-07	calf death	wolf	confirmed	forest
*AP-078	04-04-07	calf death(GPS study)	wolf	county not	WS-possible forest
*AP-079	04-04-07	calf death(GPS study)	wolf	informed	WS-possible forest
AP-080	04-11-07	steer death	wolf	confirmed	forest
AP-081	04-14-07	cow death	wolf	confirmed	forest
AP-082	04-14-07	calf missing	unknown	unknown	forest
AP-083	04-17-07	cow death	unknown	WS-unknown	forest
AP-084	04-29-07	horse death	unknown	unknown	private property
AP-085	05-01-07	cow death	wolf	confirmed	state
AP-086	05-01-07	calf death	unknown	unknown	state
AP-087	05-04-07	cow death	unknown	unknown	forest
AP-088	05-06-07	horse injury	unknown	unknown	private property
AP-089	05-06-07	calf injury	unknown	unknown	private property

AP-090	05-11-07	calf death	coyote	confirmed	forest
AP-091	05-15-07	cow death	wolf	confirmed	forest
AP-092	05-21-07	calf death	unknown	unknown	private property
AP-093	05-24-07	cow death	wolf	possible/ unknown	forest
AP-094	05-24-07	cow injury	unknown	unknown	private property
AP-095	06-06-07	heifer death	wolf	confirmed	forest
AP-096	06-07-07	cow death	natural	confirmed	forest
AP-097	06-10-07	colt death	dogs	confirmed	forest
*AP-098	10-08-07	cow death	unknown	unknown	private property
AP-099	06-11-07	calf death	coyote	WS confirmed	private property
AP-100	06-17-07	calf injury	wolf	confirmed	forest
AP-101	06-29-07	calf death	wolf	WS confirmed	forest
AP-102	06-29-07	cow death	wolf	WS confirmed	forest
AP-103	06-28-07	cow death	wolf	WS confirmed	forest
AP-104	07-05-07	horse injury	wolf	WS possible	private property
AP-105	07-11-07	cow death	unknown	WS unknown	forest
AP-106	07-29-07	cow death	unknown	WS unknown	forest
AP-107	08-22-07	cow death	bear	confirmed	forest
AP-108	08-22-07	cow death	bear	confirmed	forest
AP-109	10-05-07	cow death	wolf	probable/unknown	forest
AP-110	10-12-07	horse death	unknown	unknown	private property
AP-111	10-15-07	calf death	wolf	confirmed	private property
AP-112	10-21-07	calf death	wolf	WS confirmed	private property
AP-113	10-31-07	calf death	wolf	WS confirmed	private property
AP-114	11-02-07	calf death	wolf	WS probable	forest
AP-115	11-02-07	calf death	wolf	WS confirmed	private property
AP-116	11-06-07	cow death	wolf	WS confirmed	private property
AP-117	11-24-07	calf death	wolf	WS confirmed	private property
AP-118	11-25-07	calf death	wolf	WS confirmed	private property
AP-119	11-27-07	calf death	wolf	WS confirmed	private property
AP-120	02-19-08	calf death	coyote	confirmed	private property
AP-121	02-19-08	calf death	coyote	confirmed	private property
AP-122	02-24-08	cow death	unknown	unknown	private property
AP-122	02-24-08	cow death	unknown	WS unknown	
AP-123	03-03-08	cow death	accident	accident	private property
AP-124	03-03-08	calf death	accident	accident	private property
AP-125	03-18-08	calf death	coyote	WS coyote	forest
AP-126	03-18-08	cow death	unknown	WS unknown	forest
AP-127	03-24-08	calf death	coyote	confirmed	forest
AP-128	03-25-08	cow death	unknown	unknown	forest
AP-129	03-29-08	calf death	wolf	confirmed	forest
AP-130	04-03-08	calf missing	missing	missing	private property
AP-131	04-07-08	calf death	wolf	confirmed	private property
AP-132	04-14-08	cow death	unknown	unknown	forest
AP-133	04-22-08	cow death	wolf	confirmed	private property
AP-134	04-27-08	calf death	coyote	confirmed	private property
AP-135	05-06-08	cow injury	wolf	confirmed	private property
AP-136	05-14-08	cow death	accident	accident	forest
AP-137	05-14-08	cow death	unknown	unknown	forest

AP-138	05-14-08	cow death	bear	confirmed	private property
AP-139	05-19-08	dead calf	unknown	unknown	forest
AP-140	05-21-08	injured calf	wolf	confirmed	private property
AP-141	06-04-08	injured calf	wolf	confirmed	forest
AP-142	06-08-08	dead calf	unknown	unknown	forest
AP-143	06-27-08	dead steer	wolf	confirmed	private property
AP-144	06-28-08	dead steer	unknown	unknown	private property
AP-145	06-29-08	dead heifer	unknown	unknown	private property
AP-146	06-29-08	heifer missing	unknown	unknown	private property
AP-147	07-05-08	dead calf	wolf	confirmed	private property
AP-148	07-10-08	dead calf	bear	confirmed	forest
AP-149	07-12-08	dead calf	wolf	probable	forest
AP-150	07-15-08	dead cow	bear	confirmed	forest
AP-151	07-16-08	dead steer	wolf	confirmed	forest
AP-152	07-16-08	injured calf	wolf	confirmed	forest
AP-153	07-16-08	injured calf	wolf	confirmed	forest
AP-154	07-16-08	injured calf	wolf	confirmed	forest
AP-155	07-16-08	missing calf	wolf	probable	forest
AP-156	07-16-08	missing calf	wolf	probable	forest
AP-157	07-29-08	injured calf	wolf	confirmed	forest
AP-158	08-04-08	injured calf	wolf	confirmed	forest
AP-159	08-06-08	dead steer	wolf	confirmed	forest
AP-160	08-15-08	injured calf	wolf	WS confirmed	forest
AP-161	08-20-08	dead cows (3)	lightning	WS confirmed	forest
AP-162	08-21-08	dead chicken	wolf	confirmed/probable	private property
AP-163	08-23-08	dead steer	unknown	unknown	forest
AP-164	09-08-08	dead calf	wolf	confirmed	forest
AP-165	09-08-08	dead calf	wolf	confirmed	forest
AP-166	09-10-08	dead steer	wolf	confirmed	forest
AP-167	10-17-08	dead calf	unknown	unknown	forest
AP-168	10-17-08	dead cow	unknown	unknown	private property
AP-169	10-29-08	dead cow	unknown	unknown	forest
AP-170	01-13-09	dead chickens	coyote	confirmed	private property
AP-171	01-20-09	dead calf-wolf at scene	unknown	unknown	private property
AP-172	01-29-09	dead calf	coyote	confirmed	forest
AP-173	03-11-09	missing calf	wolf	probable	private property
AP-174	03-23-09	dead cow	unknown	unknown	forest
AP-175	04-08-09	dead calf	lion	confirmed	forest
AP-176	05-12-09	missing calf	unknown	unknown	forest
AP-177	05-12-09	dead calf	wolf	confirmed	forest
AP-178	05-19-09	dead calf	wolf	probable	forest
AP-179	05-28-09	chicken attack missing	wolf	confirmed	private property
AP-180	06-14-09	dead calf	wolf	confirmed	forest
AP-181	06-15-09	dead calf	unknown	unknown	private property
AP-182	07-01-09	dead cow	unknown	unknown	forest
AP-183	07-30-09	dead calf	coyote	confirmed	private property
AP-184	08-03-09	dead yearling	wolf	confirmed	forest
AP-185	08-06-09	dead yearling	wolf	confirmed	forest

AP-186	08-06-09	dead yearling	wolf	confirmed	forest
AP-187	08-06-09	dead yearling	wolf	confirmed	forest
AP-188	08-06-09	dead yearling	wolf	confirmed	forest
AP-189	08-06-09	dead yearling	wolf	confirmed	forest
AP-190	08-06-09	dead yearling	wolf	confirmed	forest
AP-191	08-06-09	dead yearling	wolf	confirmed	forest
AP-192	08-06-09	dead yearling	wolf	confirmed	forest
AP-193	08-06-09	dead yearling	wolf	confirmed	forest
AP-194	10-02-09	dead steer	unknown	unknown	forest
AP-195	10-26-09	dead elk	wolf	confirmed	private property
AP-196	10-26-09	dead heifer	wolf	confirmed	private property
AP-197	02-02-10	dead cow	wolf	probable	private property
AP-198	02-03-10	dead calf	unknown	confirmed	private property
AP-199	02-03-10	dead calf	unknown	confirmed	private property
AP-200	02-07-10	dead cow	unknown	confirmed	private property
AP-201	02-16-10	dead cow	bear	confirmed	forest
AP-202	02-19-10	dead calf	wolf	confirmed	private property
AP-203	02-19-10	dead bull	unknown	unknown	private property
AP-204	04-01-10	dead horse colt	wolf	confirmed WS	private property
AP-205	04-07-10	dead elk	wolf	confirmed	private property
AP-206	04-15-10	dead colt	coyote	confirmed	private property
AP-207	04-18-10	dead calf	domestic dog	confirmed	private property
AP-208	04-18-10	dead calf	still born	confirmed	private property
AP-209	04-26-10	dead cow	wolf	confirmed	forest
AP-210	04-27-10	dead yearling	wolf	confirmed	private property
AP-211	04-30-10	dead cow	unknown	unknown	private property
AP-212	05-13-10	calf injury	wolf	confirmed	forest
AP-213	06-18-10	dead calf	wolf	confirmed	private property
AP-214	06-18-10	calf injury	wolf	confirmed	private property
AP-215	06-21-10	dead calf	wolf	confirmed	private property
AP-216	06-29-10	dead sheep	coyote	confirmed	private property
AP-217	07-19-10	calf injury	unknown	unknown	private property
AP-218	01-04-11	dead calf	wolf	probable	forest
AP-219	01-04-11	dead calf	wolf	confirmed	forest
AP-220	01-04-11	dead cow	unknown	unknown	forest
AP-221	01-15-11	dead steer	wolf	confirmed	forest
AP-222	01-16-11	dead heifer	wolf	confirmed	forest
AP-223	02-01-11	dead calf	unknown	confirmed	private property
AP-224	02-03-11	dead calf	wolf	confirmed	forest
AP-225	02-03-11	dead calf	wolf	confirmed	forest
AP-226	02-07-11	dead cow	wolf	confirmed	private property
AP-227	02-07-11	dead calf	wolf	confirmed	private property
AP-228	02-07-11	dead yearling	wolf	confirmed	private property
AP-229	02-07-11	yearling injury	wolf	confirmed	private property
AP-230	02-07-11	yearling injury	wolf	confirmed	private property
AP-231	02-07-11	yearling injury	wolf	confirmed	private property
AP-232	02-07-11	yearling injury	wolf	confirmed	private property
AP-233	02-09-11	dead heifer	wolf	confirmed	State

AP-234 03-16-2011 cow death	wolf	confirmed	forest
AP-235 03-16-2011 calf death	wolf	confirmed	forest
AP-236 03-24-2011 cow death	wolf	confirmed	forest
AP-237 04-27-2011 calf death	bear	confirmed	forest
AP-238 05-02-2011 cow death	unknown	unknown	forest
AP-239 05-24-2011 cow death	wolf	confirmed	forest
AP-240 05-24-2011 calf death	wolf	confirmed	forest
AP-241 06-10-2011 calf death	wolf	confirmed	private property
AP-242 06-10-2011 calf death	wolf	confirmed	private property
AP-243 06-16-2011 calf injury	wolf	confirmed	forest
AP-244 06-19-2011 calf death	wolf	confirmed	forest
AP-245 07-05-2011 calf death	wolf	confirmed	forest
AP-246 07-08-2011 steer death	wolf	confirmed	forest
AP-247 07-08-2011 steer death	wolf	confirmed	forest
AP-248 07-12-2011 yearling colt	wolf	confirmed	private property
AP-249 07-17-2011 calf death	bear	confirmed	forest
AP-250 08-02-2011 cow death	unknown	unknown	forest
AP-251 08-11-2011 calf death	wolf	probable	forest
AP-252 08-22-2011 calf death	wolf	confirmed	forest
AP-253 08-31-2011 steer death	wolf	confirmed	forest
AP-254 09-04-2011 cow death	unknown	unknown	forest
AP-255 09-04-2011 cow death	unknown	unknown	forest
AP-256 09-04-2011 cow death	unknown	unknown	forest
AP-257 09-04-2011 cow death	unknown	unknown	forest
AP-258 09-05-2011 steer death	unknown	unknown	forest
AP-259 09-21-2011 calf death	wolf	confirmed	forest
AP-260 10-09-2011 yearling death	unknown	unknown	forest
AP-261 10-18-2011 calf death	unknown	unknown	forest
AP-262 11-01-2011 calf death	bear	confirmed	forest
AP-263 11-08-2011 calf death	unknown	unknown	forest
AP-264 11-20-2011 calf death	wolf	confirmed	forest
AP-265 01-04-2012 calf death	wolf	confirmed	forest
AP-266 02-09-2012 calf death	unknown	unknown	forest
AP-267 02-11-2012 mule death	wolf	confirmed	private property
AP-268 02-17-2012 cow death	unknown	unknown	forest
AP-269 02-25-2012 cow injury	wolf	WS/confirmed	forest
AP-270 03-05-2012 calf death	wolf	confirmed	forest
AP-271 03-06-2012 calf death	wolf	confirmed	forest
AP-272 03-06-2012 cow death	wolf	probable	forest
AP-273 03-12-2012 horse death	unknown	unknown	forest
AP-274 03-13-2012 cow death	unknown	unknown	forest
AP-275 03-27-2012 cow death	wolf	confirmed	BLM
AP-276 03-27-2012 calf death	wolf	confirmed	BLM
AP-277 03-28-2012 calf injury	domestic dogs	domestic dogs	forest
AP-278 04-25-2012 calf death	wolf	confirmed	private property
AP-279 05-21-2012 calf death	wolf	confirmed	forest

Note= brought up to date as incidents occur/ including other agency findings. *=out of sequence

Note* As of 10-01-07, IFT/AMOC removed the "Possible" finding in wolf-Human interactions and livestock-pet depredation categories leaving "Probable and Confirmed". Stress death by wolves running cattle are being addressed by Wildlife Services but not USFWS.

Livestock/Wolf Related:

Death: Confirmed= 96, Probable= 10, Possible= 21
Injuries: Confirmed= 19, Probable= 1, Possible= 5
Missing: calf reported=6, probable 3, possible 3 (high percentage not reported)
Harassment: Confirmed= 1, Probable= 0, Possible= 2

Livestock Total= 160

Wolf-Pet Deaths: Confirmed= 4, Probable= 0, Pets Total= 9
Confirmed Injuries= 5 169

Wolf-Animal complaints received as of 04-06; = 279 – wolf related 169 = 110 non-wolf related of total complaints, of the 110 = 63 are "Unknown" Unknown: Consist of livestock not found in time for necropsy, advance decomposition, ground conditions, Weather conditions, evidence lost by savaging canines and birds.

Missing: Very few reported. Mostly involves small calves that are carried off or consumed totally with no remains left. Missing are ruled 'Unknown" as a cause of death.

Wolf-Animal interactions on private property= 105
Wolf-Animal interactions on non-private property=174

NOTE:
U.S. Fish and Wildlife Service John Oakleaf's study of confirmed wolf killed livestock found: for every wolf killed livestock "confirmed" there are "7" more that are not confirmed. Example; one ranch in 2009 had 10 confirmed wolf killed yearlings and have another 80 head missing. This is consistent with Oakleaf's study.

Defenders of Wildlife are 2 years behind on some compensation claims. The USFWS should be accountable for compensation, not a Pro-Wolf Non-Government Organization.

Wildlife Deaths:

elk	wolf	confirmed	5	private property 2	forest 3

*Wildlife Deaths: Confirmed= 5, (2 prior) Probable= 0, Injuries= 0

Note: few wildlife deaths are reported.

Complaints received:

Case#	Date	location	Wolf-Human Interaction	Wolf Behavior	Land Ownership
WSS-001	07-17-06	Big dry US 180	seen from vehicle	traveling	state
WSS-002	07-24-06	near catwalk picnic area	seen from vehicle	traveling	private property
WSS-003	07-21-06	Reserve	seen from business,	2 wolves standing/looking	private property
WSS-004	08-06-06	FR 19	seen from vehicle	5 wolves traveling	private property
WSS-005	08-07-06	lower Reserve	wolf near horses	standing/looking at owner	private property
WSS-006	09-04-06	cold springs	wolf near cow/calf	standing/looking	forest
WSS-007	09-06-06	near willow creek	seen from vehicle	stood looking 3-4 min.	forest
WSS-008	08-24-06	cold springs	wolf scat	wolf scat	forest
WSS-009	09-23-06	south of Patterson	hunter saw 2 wolves	traveling	forest
WSS-010	10-13-06	main street Luna	wolf in town at 9 am	near people/homes	private property
WSS-011	10-23-06	Alma resident, owner charged wolves with ¾"pipe,	2 wolves attacking pet dogs		private property
WSS-012	10-23-06	Alma residence	owner observed wolves	standing/looking	private property
WSS-013	10-25-06	Cruzville resident	owner observed wolves	2 wolves traveling	private property
WSS-014	10-30-06	Cruzville resident	owner observed wolf	milling around behind home	forest
WSS-015	10-09-06	Cruzville resident	owner observed wolf	near barn	private property
WSS-016	11-22-06	lower Frisco, wolf on SR435 in front of residence, traveled towards Reserve,			State & private property
WSS-017	11-26-06	south of Reserve	wolf near residence	wolf howling	private property
WSS-018	11-29-06	SR12 SU canyon	seen from vehicle	wolf crossed road	state
WSS-019	11-29-06	Black Canyon, owner and pet dogs walking to house from barn wolf attacked dog			private property
WSS-020	12-02-06	south of Reserve	wolf near residence	wolf howling	private property
WSS-021	12-13-06	north of Quemado	wolf tracks at residence	on property	private property
WSS-022	12-19-06	Hay Vega	hunter on 4 wheeler confronted by wolf, walked towards rider-looking		forest
WSS-023	01-26-07	Rancho Grande Subdivision/US180	seen from vehicle	wolf near restaurant	state
WSS-024	01-26-07	Legget	lady riding horse confronted by wolf, stood looking-circled in front of rider		forest
WSS-025	01-30-07	Mule Creek	seen from vehicle	2 wolves standing/looking	forest
WSS-026	01-31-07	near Reserve	resident observed wolf near home	standing/looking	private property
WSS-027	02-09-07	Rancho Grande Subdivision	observed wolf at lower pond	hunting ducks	forest
WSS-028	02-09-07	Lost Springs	son hunting encountered 2 wolves	traveling	forest
WSS-029	02-11-07	SR12 mp 31 ½	seen from vehicle	collared wolf crossed road	forest
WSS-030	02-12-07	Escondia Bonita Subdivision	resident observed 3 wolves near her home,	traveling	forest
WSS-031	02-28-07	Diamond Creek	wolves around hunting camp	ran off horses	forest
WSS-032	03-05-07	Horse Peak Subdivision	wolves seen and heard	traveling/howling	private property
WSS-033	04-02-07	wolf howling/barking at residence for 20 minutes			private property
WSS-034	04-04-07	wolf eating a bone on lawn in front of restaurant, Rancho Grande			private property
WSS-035	04-04-07	wolf behind home in Rancho Grande Subdivision			forest
WSS-036	05-02-07	Durango wolves	less than 15 feet from home (1st incident)		private property
WSS-037	05-04-07	Taylor Creek, wolves on private property, denning less than 1/8 mi.			private property
WSS-038	05-09-07	Wolf on property near home			private property
WSS-039	05-11-07	Apache Creek, 2 wolves within 20 feet of front porch			private property
WSS-040	05-12-07	Pleasanton, wolf next to hone in pasture			private property
WSS-041	05-17-07	Deadman springs, wolf pack (5+) on property near home			private property
WSS-042	05-23-07	Two children encounter wolf walking home from school bus stop			forest
WSS-043	05-23-07	Durango wolves	less than 15 feet from home(2nd incident)		private property
WSS-044	05-23-07	Apache Creek, wolf near property			forest
WSS-045	05-30-07	Durango wolves	less than 15 feet from home(3rd incident)		private property
WSS-046	06-07-07	Durango wolves	at residence(4th incident)		private property

WSS-047	06-11-07	Durango Wolves	at residence(5th incident	private property
WSS-048	06-14-07	un-collared wolf	in Aragon	private property
WSS-049	06-23-07	Durango wolves approach family within 50yards (6th incident)		private property
WSS-050	06-24-07	wolf howling near home where two small children live		county road
WSS-051	06-24-07	Durango wolves	at residence (7th incident)	private property
WSS-052	06-25-07	Durango wolves	at residence (8th incident)	private property
WSS-053	06-27-07	Durango wolves	at residence (9th incident)	private property
WSS-054	07-01-07	Durango wolves	at residence (10th incident)	private property
WSS-055	07-09-07	wolf at campsite, 2 wolves howling		forest
WSS-056	07-09-07	wolf howling near home		private property
WSS-057	07-13-07	wolf howling near home		private property
WSS-058	07-14-07	wolf seen crossing highway		State
WSS-059	09-10-07	Durango wolves	at residence (11th incident)	private property
WSS-060	09-11-07	Durango wolves	at residence (12th incident)	private property
WSS-061	09-16-07	wolves chasing vehicle pulling trailer		forest
WSS-062	09-21-07	Durango wolves	at residence (13th incident)	private property
WSS-063	09-25-07	Durango wolves	at residence (14th incident)	private property
WSS-064	09-30-07	Durango wolves	at residence (15th incident) W1	private property
WSS-065	10-02-07	Durango wolves	at residence (16th incident) W2	private property
WSS-066	10-03-07	Durango wolves	at residence (17th incident) W3	private property
WSS-067	10-04-07	Durango wolves	at residence (18th incident) W4	private property
WSS-068	10-05-07	Durango wolves	at residence (19th incident) W5	private property
WSS-069	10-07-07	Durango wolves	at residence (20th incident) W6	private property
WSS-070	10-08-07	wolf chasing sheep near Reserve		private property
WSS-071	10-09-07	Durango wolves	at residence (21st incident) W 7	private property
WSS-072	10-15-07	Durango wolves	at residence (22nd incident)	private property
WSS-073	10-19-07	Durango wolves	at residence (23rd incident)	private property
WSS-074	10-22-07	Durango wolves	at residence (24th incident)	private property
WSS-075	10-23-07	Durango wolves	at residence (25th incident)	private property
WSS-076	10-25-07	Durango wolves	at residence (26th incident)	private property
WSS-077	10-27-07	Durango wolves	at residence (27th incident)	private property
WSS-078	11-01-07	Durango wolves	at residence (28th incident)	private property
WSS-079	11-21-07	wolves near private property		forest
WSS-080	11-21-07	wolf near ranger station		forest
WSS-081	11-24-07	wolf at community center in Glenwood		private property
WSS-082	11-28-07	wolves eat hunters tagged elk		forest
WSS-083	11-29-07	wolf near residence, at Glenwood Elementary school		private property
WSS-084	12-02-07	(2) un-collared wolves near hunters		forest
WSS-085	12-14-07	(2) wolves at driveway, near home, cross pasture		private property
WSS-086	12-14-07	(2) wolves near home		private property
WSS-087	12-16-07	(2) wolves near home		private property
WSS-088	01-01-08	(2) wolves behind home		forest
WSS-089	01-11-08	wolf at subdivision		private property
WSS-090	01-20-08	wolf in livestock, ½ mile from residence		forest
WSS-091	03-14-08	wolf near bus stop		county road
WSS-092	05-12-08	wolf within 100yds	at residence (29th incident)	private property
WSS-093	05-26-08	wolf within 100yds	at residence (30th incident)	private property
WSS-094	06-08-08	wolf on US180 near community, tracks cast		state
WSS-095A	07-03-09	3 wolves among cattle		Private Property

WSS-095B	07-19-08	wolf near residence north of Luna	private property
WSS-096	08-03-08	wolf howling south end of Rancho Grande	forest
WSS-097	08-22-08	wolf in cow/calf herd near Snow Lake	forest
WSS-098	09-01-08	wolf seen from school bus in Cruzville	private property
WSS-099	11-14-08	2 wolves, one snooping around truck and trailer	forest
WSS-100	12-19-08	single wolf at north end of the town of Reserve	private property
WSS-101	12-23-08	wolf in front of Glenwood Community Center	private property
WSS-102	12-29-08	wolf howling at residence	private property
WSS-103	01-12-09	wolf at Little Dry Canyon near livestock	private property
WSS-104	01-13-09	wolf howling at residence	private property
WSS-105	02-28-09	wolf near homes	forest
WSS-106	08-07-09	two wolves in pasture	forest
WSS-107	04-19-09	wolf near residence	private property
WSS-108	07-24-09	wolf in barn hunting house cats, has wolf proof fence	Private Property
WSS-109	08-03-09	wolf on property near home and barn, has wolf proof fence	Private Property
WSS-110	08-11-09	wolf on property near barn, has wolf proof fence	Private Property
WSS-111	09-25-09	wolf on driveway- confirmed coyote	County road
WSS-112	11-05-09	wolf near residence chasing horse	private property
WSS-113	12-05-09	wolf 30 feet from residence	private property
WSS-114	12-05-09	wolf traveling	
WSS-115	01-06-10	wolf crossing road near livestock	private property
WSS-116	01-15-10	wolf traveling on State Road 12	forest
WSS-117	01-15-10	3 wolves howling behind residence	forest
WSS-118	01-26-10	2 wolves at residence	private property
WSS-119	01-31-10	2 wolves east end of Aragon traveling	private property
WSS-120	02-05-10	3 sets of wolf tracks near livestock – calf missing	forest
WSS-121	02-08-10	wolf near residence	private property
WSS-122	02-12-10	2 wolves 50 feet from residence	private property
WSS-123	02-19-10	3 wolves near bull carcass seen while investigating dead calf	private property
WSS-124	02-19-10	5 wolves near residence	private property
WSS-125	02-19-10	wolf chasing house cat in town of Aragon	private property
WSS-126	02-19-10	4 wolves near residence, two stalking 200 pound calf	private property
WSS-127	03-11-10	wolf near residence traveling	private property
WSS-128	04-11-10	wolf on US 180 south of Glenwood	State highway
WSS-129	04-18-10	2 sets of wolf tracks above residence	private property
WSS-130	07-10-10	wolf behind residence where children play	private property
WSS-131	07-21-10	2 sets of wolf tracks above residence	private property
WSS-132	09-07-10	collared wolf on private property	private property
WSS-133	09-15-10	wolf near residence- confirmed coyote	private property
WSS-134	11-22-10	wolf on private property	private property
WSS-135	01-08-11	wolf howling near home	forest
WSS-136	02-12-11	wolf in livestock near residence	private property
WSS-137	02-18-11	3 wolves running in cattle	private property
WSS-138	03-02-11	wolf in backyard of residence	private property
WSS-139	03-08-11	wolf in cows birthing calves	private property
WSS-140	05-06-11	wolf behind residence	private property
WSS-141	05-08-11	wolf at residence	private property
WSS-142	05-17-11	wolf at residence	private property
WSS-143	05-31-11	wolf at residence	private property
WSS-144	10-30-11	wolf crossing road	State

WSS-145	12-13-11	wolf at residence	private property
WSS-146	12-22-11	2 wolves near house	private property
WSS-146A	01-09-12	wolf 60 yards from residence, 2 more wolves just off property	private property
WSS-147	01-11-12	wolf near residence	forest
WSS-148	01-24-12	wolf crossed road	State
WSS-149	01-27-12	wolf near residence	private property
WSS-150	01-31-12	wolf at residence	private property
WSS-151	02-08-12	wolf near residence	private property
WSS-152	02-13-12	wolf at residence	private property
WSS-153	03-07-12	3 wolves at residence	private property
WSS-154	05-20-12	3 wolves in pasture	private property

WH-psy-7

Total wolf-human interactions = 154
Wolf Incidents on Private Property = 116
Wolf incidents on Non-private property = 38

Combined Complaint Totals: 479

Wolf-animal complaints 279, wolf-human interactions 154, wolf-human psy.7, Information reports 46 = total 462 incidents

Wolf animal incidents on private property=105, Wolf-human Incidents on Private Property=116 total 221
Information reports 46 – 479 =433

Total incidents on private property;
Wolf interactions on private property = 221 – 433 =212
Wolf interactions non-private property = 212

Note; approximately 50% of wolf interactions were on private property confirming the degree of wolf habituation. A habituated wolf seeks out humans and human use areas and lacks an avoidance response to humans contrary to wild wolf characteristics.

Other Reports/Investigations:

Information Reports wolf related (46)

*Habituated wolf problem extreme, no action by USFWS/NMDGF to remove any documented habituated wolves.

Note: Recommendation to the Catron County Commission for action on the exclusion of wolf# 806 from the wolf program, due to the wolf exhibiting habituated, fearless behavior towards humans and human use areas.

Note: Durango Wolf AF924 is extremely habituated towards humans and human use areas. (biting incident) Consideration for Removal request by county to USFWS. Put into captivity 11-17-06, re-released 04-24-07

Note: Durango Wolf AM973 is extremely habituated towards humans and human use areas. Consideration for removal request by county commission to USFWS. AM973 at occupied homes 28 times. Also Durango pup at occupied homes 18 times.

_____/s/_____

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