

THE LINEBERY POLICY CENTER
FOR NATURAL RESOURCE MANAGEMENT

**The Economic Impact of
Critical Habitat
for the
Lesser
Prairie Chicken
on the
Livestock Industry in New Mexico**

2015 revised edition
Linebery Position Paper #2



Table of Contents

<i>Introduction</i>	4
<i>Methodology</i>	5
<i>Assumptions</i>	6
<i>Area Affected by Critical Habitat Designation</i>	6
<i>New Mexico Statewide Livestock Industry</i>	6
<i>10 County Region</i>	7
<i>Chaves County, New Mexico</i>	8
<i>Curry County, New Mexico</i>	9
<i>De Baca County, New Mexico</i>	10
<i>Eddy County, New Mexico</i>	11
<i>Harding County, New Mexico</i>	12
<i>Lea County, New Mexico</i>	13
<i>Quay County, New Mexico</i>	14
<i>Roosevelt County, New Mexico</i>	15
<i>San Miguel County, New Mexico</i>	16
<i>Union County, New Mexico</i>	17
<i>Discussion</i>	18
<i>Conclusion</i>	19
<i>Appendix</i>	20-23

Authors

Roy Seawolf, M.S., J.D-Natural Resource Law and Economic Policy Analyst

Dr. John Fowler- Policy Center Director/Tom Linebery Distinguished Chair

Dr. Jerry Schickedanz- Evelyn Linebery Distinguished Chair

©Copyright 2015 by the Linebery Policy Center for Natural Resource
Management. All Rights Reserved.

Introduction

Cattle ranching remains an important part of New Mexico agriculture, supporting local county economies and the state economy as a whole. The livestock industry includes the value-added activities from processing cattle as well as products derived from rendering, tanning, and other non-edible Livestock products. Moreover, economic activity in the livestock industry has multiplier effects, generating additional jobs and sales in the local economy.

The livestock industry purchases inputs from other sectors of the economy (indirect effects) and earnings (profits and wages) from the industry are spent on New Mexico goods and services (induced effects). These multiplier effects provide additional stimulus to other sectors of the local economy that one can measure by output (sales), value added (GDP), labor income, and jobs.

The goal of this paper is to determine the economic consequences that the listing and ultimate Critical Habitat designation of the LPC will have on the livestock industry on each individual county, the 10 county regional economy, and the state economy as a whole. Because of the interaction between the livestock industry and numerous businesses and individuals in the region, cut backs in the livestock sector will have extensive negative impacts statewide. This report attempts to identify and analyze the potential economic impacts of the designation of Critical Habitat for the LPC on the livestock industry, businesses, and private citizens in 10 Counties in eastern New Mexico.

The ESA and the Livestock Industry

The listing of the LPC as threatened is cause for concern for the range livestock industry. Under the Endangered Species Act (ESA), the possibility that private property will be impacted begins with the “listing¹” of an endangered² and or threatened³ species. When the Secretary of the Interior⁴, through the United States Fish and Wildlife Service (USFWS), lists a species as endangered and or threatened the ESA protections commence. Once a species is listed under the ESA there are prohibitions related to the “take” of listed species and certain activities may require the landowners to obtain a permit from the USF-

1 http://www.fws.gov/sacramento/es_species/Lists/es_species_lists-form.cfm

2 An Endangered Species is a species at risk of extinction because of human activity, changes in climate, changes in predator-prey ratios, etc., especially when officially designated as such by a governmental agency such as the U.S. Fish and Wildlife Service.

3 Threatened species are any species (including animals, plants, fungi, etc.) which are vulnerable to endangerment in the near future.

4 The current Secretary of the Interior is Sally Jewell, sworn in as the 51st Secretary of the Interior on April 12, 2013.

WS in order to improve or make changes to their private property. The term “take” should not be confused with Fifth Amendment takings⁵. In this instance the statute is interpreted to mean almost any act that could adversely affect a protected species member or its habitat including; harassing, harming, pursuing, hunting, capturing, or collecting a listed animal⁶.

The Lesser Prairie Chicken (LPC) is a species of grouse common to the grasslands, with half of the population living in western Kansas, and the remainder living in Oklahoma, Texas, and eastern New Mexico⁷. The Historic Range of the LPC is located almost entirely on privately owned land⁸. The livestock industry will certainly be affected by the listing of the LPC as threatened, even more so if it becomes listed as endangered due to the fact that the livestock industry utilizes large amounts of land in and around potential proposed Critical Habitat areas. This could result in (1) change in season of use, and (2) livestock removal.

The listing itself is done solely on the basis of the best scientific commercial data available to the Secretary of the Interior without reference to economic costs or private property rights, however the Secretary is required, when designating the Critical Habitat⁹ of the species that both scientific, and economic impact data be considered in the decision process, as well any other relevant impacts to private property interests¹⁰.

In March of 2014 the USFWS declared that the LPC population was in severe decline, listed the LPC as threatened, and began implementation of protection procedures¹¹.

According to a study done by the Center for Environmental Science, Accuracy, and Reliability (CESAR) however, the United States Fish and Wildlife Service only assumed the population were in decline and that the loss of genetic diversity was based on “after the fact” rationalizations in order to support the listing, even though the best available data on population growth and genetic health demonstrated that the LPC is not in decline throughout a

5 The Takings Clause, the last clause of the Fifth Amendment, limits the power of eminent domain by requiring that “just compensation” be paid if private property is taken for public use

6 Annett, Alexander F. (1998) Reforming the Endangered Species Act to Protect Species and Property Rights, The Heritage Foundation 214 Massachusetts Ave., N.E. Washington, D.C.

7 Conservation Needs of the Lesser Prairie-Chicken U.S. Fish and Wildlife Service Technical White Paper July 2012

8 http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/?cid=nrcs-dev11_023912, Retrieved January 2014

9 Critical habitat - vital land area protected for the survival of endangered or threatened species.

10 Id at 1

11 <http://www.fws.gov/southwest/es/LPC.html>, retrieved February, 2014

significant portion of its range.¹² The divergent viewpoints concerning the condition of the LPC gives rise to the need for additional study. If indeed the LPC is not threatened as CESAR claims then the need to understand the economic impact to the 10 county region affected is imperative. However, if the LPC is threatened as claimed by the USFWS then an understanding of how to mitigate the impact to the 10 county region livestock industry is equally important.

Methodology

Critical Habitat is a geographic location that is occupied by the Lesser Prairie Chicken (LPC) at the time it was listed. These areas are determined to have the requisite physical and biological features necessary for the conservation of the LPC. Critical Habitat may also include areas that are not inhabited by the LPC at the time of the listing, but are considered essential to its conservation .”

Because the Lesser Prairie Chicken requires large parcels of intact native grassland and shrub land, often in excess of 20,000 acres to maintain self-sustaining populations , it is likely that ranchers will face more challenges to grazing, allowing only a certain number of livestock on particular rangeland and limiting the length of time they are allowed to graze. Inevitably, this leads to reduced herd numbers and reduced output.

There has been some discussion whether or not the ESA affects private land holdings . The argument is that unless there is a federal “nexus” between the land owner and the federal government, the ESA does not apply.

In *N. Cal. River Watch v. Wilcox*, (633 F.3d 766; 2011 U.S. App.) the question was asked; is private land adjacent to land under federal jurisdiction subject to ESA requirements and does it constitute a federal nexus? Even though the decision In *River Watch* clearly states that the ESA §9 (a) (2) (B) does not regulate actions that harm a listed plant species (or animal) on private property and creates no federal nexus, the fact that Critical Habitat for the Lesser Prairie Chicken will become a Special Management Area, creates a federal nexus and becomes an area under federal jurisdiction. The language in *River Watch* clearly specifies that federal property interests could be categorized as conservation easements, leasehold estates, and of particular importance, special management areas.

The New Mexico statewide, 10 county region, and individual county livestock industry will be examined to show

the inter connection between the livestock industry, other businesses, and private individuals who; whether they realize it or not, partially rely on the industry for their livelihood. Each area is modeled individually using the IMPLAN Group, LLC software, with the model exhibiting conditions of the local economy. This is an important consideration for several reasons. First, the livestock industry definition provided above is not consistent across geographies.

At the state level, there are numerous ranching operations, as well as intermediate industries that use beef animal products in their operations. This is not necessarily the case at the county level. Some New Mexico counties do not have any cattle processing facilities. For these counties, the livestock industry is comprised solely of the livestock cattle ranching sector which includes, cow-calf, yearling, and sheep. Second, when inputs are purchased or incomes are spent outside of the region; those dollars leave the area and no longer circulate throughout the local economy. This event is called “leakage” and results in an inconsistency between the state results and the sum of the 10 county results.

For example, in the state model, a rancher in Chaves County can buy inputs from a business in Bernalillo County and there would be no leakage out of the New Mexico state economy. In the Chaves County model, however, those purchases result in leakage because the area being modeled is the local Chaves County economy. Therefore, the economic contribution of the livestock industry to New Mexico is greater than the sum of the contributions from each individual County. Ultimately we define terms used by the IMPLAN modeling system.

- **Labor income** includes all forms of employment income, including employee compensation (wages and benefits) and proprietor income.
- **Jobs** refer to full-time and part-time wage and salary employment. Persons who are self-employed, proprietors, or unpaid family workers are not included in the jobs estimates.
- **Proprietor income**, however, is counted as part of labor income.
- **Output** is the value of production. In IMPLAN, this represents annual production estimates for the year of the data set valued in producer prices.
- **Value added** is the difference between the value of total output and the cost of intermediate inputs. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). It also consists of compensation of employees, taxes on production and imports less subsidies (formerly indirect

12 DATA DO NOT SUPPORT THE PROPOSED LISTING OF LESSER PRAIRIE CHICKEN (2011), Center for Environmental Science, Accuracy, and Reliability (CESAR)

business taxes and nontax payments), and gross operating surplus.

- **Impact Analysis** measures the change in the County economy while,
- **Contribution Analysis** would show the value of this sector to the New Mexico economy. Contribution analysis removes the backward linkages from the model to show the industry importance to the overall state economy. **Therefore you will find differences in the impact table numbers and the top 10 affected table numbers at the state, region, and county levels.**

According to Jim Lane , former Director of the New Mexico Game and Fish Department of New Mexico, the 10 Counties potentially affected by the listing of the LPC in New Mexico are Curry, Chaves, De Baca, Eddy, Harding, Lea, Quay, Roosevelt, San Miguel, and Union Counties (hereafter ‘region’).

IMPLAN, an input/output modeling software, is used to estimate the county-level impacts to the livestock industry. The software combines national industry production functions with county-level economic data collected from a variety of sources to generate average output, employment, and productivity. Multipliers used to determine dollar impacts are derived from dividing the direct impacts in employment, labor income, total value added, and output in each category by the sum of the indirect and induced impacts in each category.

Output data is derived from the IMPLAN data base rather than National Agricultural Statistical Service (NASS) because of IMPLAN’s better accuracy. The 2013 version of IMPLAN is used however, according to IMPLAN multipliers have not changed dramatically since 2013 and output numbers are adjusted for inflation to 2015 values.

Assumptions:

1. The livestock grazing areas are fully stocked therefore; moving cattle from Critical Habitat areas to other areas is not an option.
2. Stocking rates are conditioned upon climatic conditions and may vary from year to year irrespective of Critical Habitat designation.
3. Reduced grazing area because of Critical Habitat designation will result in reduced stocking rate thus decreasing livestock industry output.

Area Affected by Critical Habitat Designation

County	Acres of County Affected			Historic Range
	Total Acres	Action Area	Current Range	
Chaves	3,885,440	906,603	1,780,827	2,719,808
Curry	899,840	317,591	846,908	899,840
De Baca	1,488,000	130,526	313,263	757,053
Eddy	2,676,480	85,420	569,464	939,615
Harding	1,360,640	0	0	1,093,371
Lea	2,811,520	882,045	1,681,399	2,811,520
Quay	1,840,000	0	424,615	1,273,846
Roosevelt	1,567,360	706,416	1,479,058	1,545,285
San Miguel	3,018,880	0	0	53,909
Union	2,451,200	0	0	1,581,419
Total Acres	21,999,360	3,028,600	7,095,535	13,675,666

Source: New Mexico County Acreage Map, USGS

Table 1- Acres Affected Graph

County	Percent of County Affected		
	Action Area	Current Range	Historic Range
Chaves	23%	46%	70%
Curry	35%	94%	100%
De Baca	9%	21%	51%
Eddy	3%	21%	35%
Harding	0%	0%	80%
Lea	31%	60%	100%
Quay	0%	23%	69%
Roosevelt	45%	94%	99%
San Miguel	0%	0%	2%
Union	0%	0%	65%

Source: GIS estimates based on NRCs LPC Action map USFWS conference Report June, 2011

Table 2- Percent Affected Graph

As shown in Tables 1 and 2 (above right), the Counties under study will be affected more dramatically if Critical Habitat is designated as the Historic Range area, less if the Critical Habitat is designated as the Current Range, and even less if the Action Area is selected as Critical Habitat; Curry, Chaves, Roosevelt and Lea counties will be highly affected regardless of the area chosen for Critical Habitat.

NM Livestock Industry

Impact Type	Direct Effect
Employment	7,215
Labor Income	\$ 499,178,868
Total Value Added	\$ 660,984,944
Output	\$ 1,557,031,125

IMPLAN 2013

Table 3-State wide Direct Effects

Table 3 shows the direct economic impact of the livestock industry in the state of New Mexico to be an estimated output (sales) of \$1.5 billion. The direct effects of the livestock industry also include more than \$660 million in val-

ue added (the local equivalent of gross domestic product, GDP, \$499 million in labor income (proprietor’s income plus employee compensation), and 7,215 jobs (part- and full-time jobs.

Impact Type	Total Effect
Employment	16,201
Labor Income	\$ 893,690,174
Total Value Added	\$ 1,316,162,551
Output	\$ 2,870,032,308
IMPLAN 2013	

Table 4- Statewide Total Effects

Economic activity of the livestock industry also has multiplier effects (Table 4), generating additional jobs and sales in other sectors of the state economy. Indirect effects account for Livestock industry purchases of inputs, winduced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the state economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the New Mexico economy is \$2.8 billion in output, \$1.3 billion in value added, approxmatey \$893 million in labor income and 16,201 jobs.

Every 100 Livestock industry jobs in New Mexico support an additional 120 jobs in other industries.

The livestock industry supports 16,201 jobs. 7,215 of those jobs are directly attributed to the livestock industry and the additional 8,986 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multipliers are in ratio format. As shown in table 5 for example, employment has a ratio of 1 to 1.2. Therefore using “100” jobs as your identifier, the ratio becomes 100 to 120. Multipliers are extremely useful to the livestock producer. Each category of multiplier can be gauged against income derived from livestock produced on any ranch to measure how the LPC will affect them personally.

Multiplier Implications

Impact Type	Multiplier
Employment	1.2
Labor Income	0.8
Total Value Added	1.0
Output	0.8
IMPLAN 2013	

Table 5- Statewide Multipliers

- For every loss of 100 jobs in the livestock sector, 120

jobs are lost in the economy.

- For every \$100 loss of labor income from the livestock sector, \$80 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$100 is lost to the economy.
- For every \$100 loss of output from the livestock sector, \$80 is lost to the economy.

Ten County Region

Impact Type	Direct Effect
Employment	1,865
Labor Income	263,384,216.9
Total Value Added	349,240,027.1
Output	822,677,610.3
IMPLAN 2013	

Table 6- 10 County Direct Effects

The Counties of Curry, Chaves, De Baca, Eddy, Harding, Lea, Quay, Roosevelt, San Miguel, and Union (Table 6), is comprised of the livestock ranching sector with estimated output (sales) of \$822.7 million. The direct effects of the livestock industry also include more than \$349 million in value added (the local equivalent of gross domestic product, GDP), \$263.3 million in labor income (proprietor’s income plus employee compensation), and 1,865 jobs (part- and full-time jobs) .

Impact Type	Total Effect
Employment	4,836
Labor Income	431,995,127.2
Total Value Added	630,027,198.9
Output	1,409,982,721.6
IMPLAN 2013	

Table 7- 10 County Total Effects

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy. Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects (Table7), the total contribution of the livestock industry to the 10 county economy is \$1.4 billion in output, \$630 million in value added, approximately \$431.9 million in labor income, and 4,836 total jobs.

Every 100 Livestock industry jobs in the Ten county Region supports an additional 160 jobs in other industries

The livestock industry in the 10 county region supports 4,836 jobs. 1,865 of those jobs are directly attributed to the livestock industry and the additional 2,971 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multiplier
Employment	1.6
Labor Income	0.6
Total Value Added	0.8
Output	0.7
IMPLAN 2013	

Table 8- 10 County Multipliers

- For every loss of 100 jobs in the livestock sector, 160 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$60 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$80 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$70 is lost to the economy.

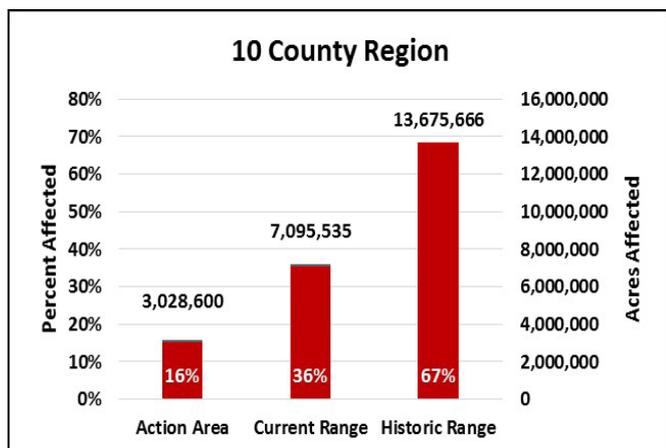


Figure 1-Acreage Affected.

Figure 1 illustrates that Sixty seven percent or 13,675,666 acres of the 10 counties under study lie within the Historic Range of the LPC, 36% in the Current Range or 7,095,535 acres, and 16% in the Action Area or 3,028,600 acres; the region could see a devastating decline in its livestock industry due to Critical Habitat designation. This decline not only affects the industry itself, but dozens of other businesses that the livestock industry supports region wide. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively (Appendix Table 40: Top Ten Industries Affected by the livestock industry in the Ten county Region.)

Chaves County, New Mexico

Impact Type	Direct Effect
Employment	131
Labor Income	\$ 43,699,169
Total Value Added	\$ 58,668,262
Output	\$ 138,200,272
IMPLAN 2013	

Table 9- Chaves County Direct Effects

The livestock industry in Chaves County is comprised of the livestock ranching sector with estimated output (sales) of \$138.2 million (Table 9). The direct effects of the livestock industry also include more than \$58.7 million in value added (the local equivalent of gross domestic product, GDP), \$43.7 million in labor income (proprietor's income plus employee compensation), and 131 jobs (part- and full-time jobs)

Impact Type	Total Effect
Employment	512
Labor Income	\$ 59,896,555
Total Value Added	\$ 87,336,974
Output	\$ 188,043,148
IMPLAN 2013	

Table 10- Chaves County Total Effects

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy. Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the Chaves County economy is \$188 million in output, \$87.3 million in value added, approximately \$59.9 million in labor income, and 512 total jobs (Table 10)

Every 100 livestock industry jobs in Chaves County supports an additional 290 jobs in other industries

The livestock industry in the Chaves County supports 512 jobs. 131 of those jobs are directly attributed to the livestock industry and the additional 381 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multiplier
Employment	2.9
Labor Income	0.4
Total Value Added	0.5
Output	0.4
IMPLAN 2013	

Table 11- Chaves County Multipliers

- For every loss of 100 jobs in the livestock sector, 290 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$40 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$50 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$40 is lost to the economy.

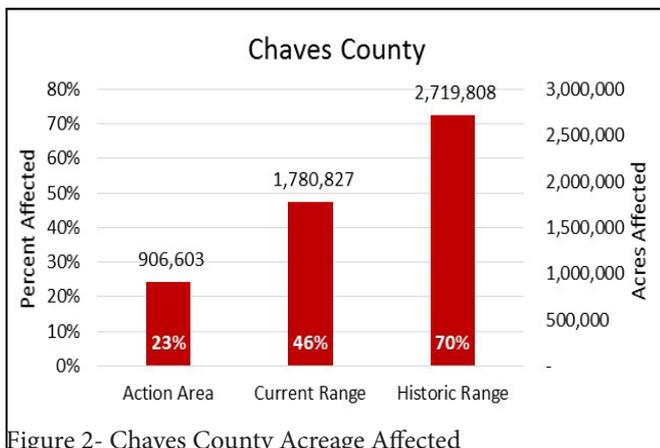


Figure 2- Chaves County Acreage Affected

Figure 2 illustrates that 70% of Chaves County or 2,719,808 acres lies within the Historic Range of the LPC, 46% or 1,780,827 acres in the current range, and 23% or 906,603 acres in the Action Area. The County could see a devastating decline in its livestock industry. This decline not only affects the industry itself, but dozens of other businesses that the livestock industry supports statewide. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted. (Appendix Table 41: Top 10 industries affected by the livestock industry in Chaves County.)

Curry County, New Mexico

Impact Type	Direct Effect
Employment	185
Labor Income	73,373,447
Total Value Added	98,238,099
Output	231,411,865
IMPLAN 2013	

Table 12- Curry County Direct Effects

The livestock industry in Curry County is comprised of the livestock ranching sector with estimated output (sales) of \$231.4 million (Table 12). The direct effects of the livestock industry also include more than \$98 million in value added (the local equivalent of gross domestic product, GDP), \$73.4 million in labor income (proprietor's income plus employee compensation), and 185 jobs (part- and full-time jobs.)

Impact Type	Total Effect
Employment	703
Labor Income	96,704,527
Total Value Added	140,204,093
Output	317,714,149
IMPLAN 2013	

Table 13- Curry County Total Effects

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy (Table 13). Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the Curry County economy is \$317 million in output, \$140 million in value added, approximately \$96.7 million in labor income, and 703 total jobs.

Every 100 livestock industry jobs in Curry County supports an additional 280 jobs in other industries

The livestock industry in Curry County supports 703 jobs. 185 of those jobs are directly attributed to the livestock industry and the additional 518 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multipliers
Employment	2.8
Labor Income	0.3
Total Value Added	0.4
Output	0.4
IMPLAN 2013	

Table 14- Curry County Multipliers

- For every loss of 100 jobs in the livestock sector, 280 jobs are lost in the economy
- For every \$100 loss of labor income from the livestock sector, \$30 is lost in the economy

- For every \$100 loss of value added from the live stock industry, \$40 is lost to the economy.
- For every \$100 loss of output from the livestock sector, \$40 is lost to the economy.

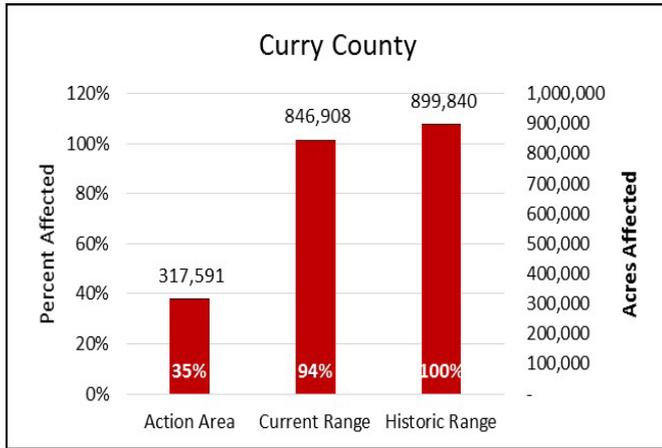


Figure 3- Curry County Acreage Affected.

Figure 3 illustrates that 100 percent of Curry County or 899,840 acres lies within the Historic Range of the LPC, 94% or 846,908 acres in the current range, and 35% or 317,591 acres in the Action Area. The county could see a devastating decline in its livestock industry. This decline not only affects the industry itself, but dozens of other businesses that the livestock industry supports statewide. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted (Appendix Table 42: Top Ten Industries affected by the livestock industry in Curry County.)

De Baca County, New Mexico

Impact Type	Direct Effect
Employment	78
Labor Income	\$ 7,723,469
Total Value Added	\$ 9,968,331
Output	\$23,481,623
IMPLAN 2013	

Table 15- De Baca County Direct Effects

The livestock industry in De Baca County is comprised of the livestock industry sector with estimated output (sales) of \$23.5 million (Table 15). The direct effects of the livestock industry also include more than \$9.97 million in value added (the local equivalent of gross domestic product, GDP), \$7.7 million in labor income (proprietor’s income plus employee compensation), and 78 jobs (part- and full-time jobs).

Impact Type	Total Effect
Employment	146
Labor Income	\$ 9,889,187
Total Value Added	\$13,829,261
Output	\$32,532,992
IMPLAN 2013	

Table 16- De Baca County Total Effects

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy (Table 16). Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the De Baca County economy is \$32 million in output, \$13.8 million in value added, approximately \$9.8 million in labor income, and 146 total jobs.

Every 100 Livestock industry jobs in De Baca County supports an additional 90 jobs in other industries

The livestock industry in the De Baca County supports 146 jobs. 78 of those jobs are directly attributed to the livestock industry and the additional 68 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multipliers
Employment	0.9
Labor Income	0.3
Total Value Added	0.4
Output	0.4
IMPLAN 2013	

Table 17- De Baca County Multipliers

- For every loss of 100 jobs in the livestock sector, 90 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$30 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$40 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$40 is lost to the economy

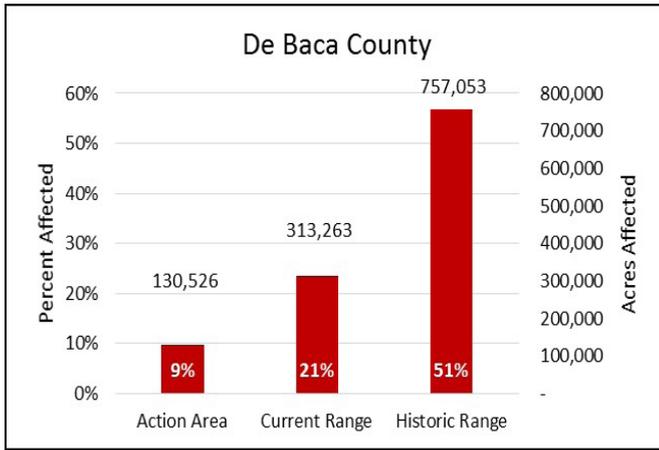


Figure 4- De Baca County Acreage Affected

Figure 4 illustrates that 51 percent of De Baca County or 757,053 acres lies within the Historic Range of the LPC, 21% or 313,263 acres in the current range, and 9% or 130,526 in the Action Area. The County could see a devastating decline in its livestock industry. This decline not only affects the industry itself, but dozens of other businesses that the livestock industry supports statewide. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted (Appendix Table 43: Top Ten Industries affected by the livestock industry in De Baca County.)

Eddy County, New Mexico

Impact Type	Direct Effect
Employment	120
Labor Income	\$ 18,728,949
Total Value Added	\$ 25,156,389
Output	\$ 59,258,953
IMPLAN 2013	

Table 18- Eddy County Direct Effects

The livestock industry in Eddy County is comprised of the livestock ranching sector with estimated output (sales) of \$59.2 million (Table 18). The direct effects of the livestock industry also include more than \$25 million in value added (the local equivalent of gross domestic product, GDP), \$18.7 million in labor income (proprietor's income plus employee compensation), and 120 jobs (part- and full-time jobs).

Impact Type	Total Effect
Employment	276
Labor Income	\$ 26,194,633
Total Value Added	\$ 37,684,994
Output	\$ 82,718,272
IMPLAN 2013	

Table 19- Eddy County Total Effects

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy (Table 19). Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the Eddy County economy is \$82.7 million in output, \$37.7 million in value added, approximately \$26 million in labor income, and 276 total jobs

Every 100 Livestock industry jobs in Eddy County supports an additional 130 jobs in other industries

The livestock industry in the Eddy County supports 276 jobs. 120 of those jobs are directly attributed to the livestock industry and the additional 156 jobs are a result of economic activity stimulated by the industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multipliers
Employment	1.3
Labor Income	0.4
Total Value Added	0.5
Output	0.4
IMPLAN 2013	

Table 20- Eddy County Multipliers

- For every loss of 100 jobs in the livestock sector, 130 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$40 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$50 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$40 is lost to the economy.

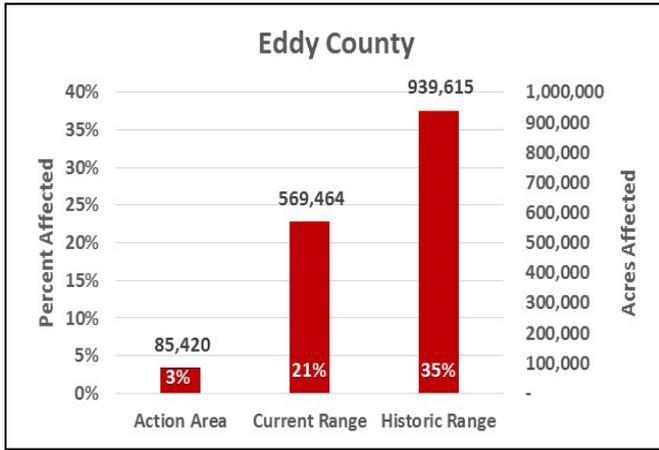


Figure 5- Eddy County Acreage Affected

Figure 5 illustrates that 35 percent of Eddy County or 939,615 acres lies within the Historic Range of the LPC, 21% or 569,464 acres in the current range, and 3% or 85,420 acres in the Action Area. The county could see a devastating decline in its livestock industry. This decline not only affects the industry itself, but dozens of other businesses that the livestock industry supports statewide. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted. (Appendix Table 44: Top Ten Industries affected by the livestock industry in Eddy County.)

Harding County, New Mexico

Impact Type	Direct Effect
Employment	122
Labor Income	10,211,677
Total Value Added	12,786,531
Output	30,120,239

IMPLAN 2013

Table 21- Harding County Direct Effects

The livestock industry in Harding County is comprised of the livestock ranching sector with estimated output (sales) of \$30.1 million (Table 21). The direct effects of the livestock industry also include more than \$12.79 million in value added (the local equivalent of gross domestic product, GDP), \$10 million in labor income (proprietor's income plus employee compensation), and 122 jobs (part- and full-time jobs)

Impact Type	Total Effect
Employment	190
Labor Income	13,319,565
Total Value Added	18,449,270
Output	42,589,660

IMPLAN 2013

Table 22- Harding County Total Effect

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy. Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes(Table 22). These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the Harding county economy is \$42.5 million in output, \$18.4 million in value added, approximately \$13.3 million in labor income, and 190 total jobs.

Every 100 livestock industry jobs in Harding County supports an additional 60 jobs in other industries

The livestock industry in the Harding County supports 190 jobs. 122 of those jobs are directly attributed to the livestock industry and the additional 68 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multipliers
Employment	0.6
Labor Income	0.3
Total Value Added	0.4
Output	0.4

IMPLAN 2013

Table 23- Harding County Multipliers

- For every loss of 100 jobs in the livestock sector, 60 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$30 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$40 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$40 is lost to the economy.

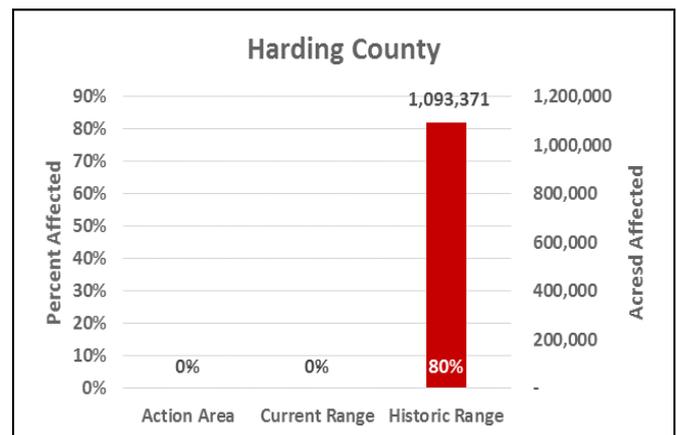


Figure 6- Harding County Acreage Affected

Figure 6 above illustrates that 80 percent of Harding County or 1,093,371 acres lies within the Historic Range of the LPC, 0% in the current range, and 0% in the Action Area. If the Critical Habitat designation falls within the Historic Range, the County could see a devastating decline in its livestock industry because of Critical Habitat designation from Kansas in the northeast and Texas from the east. The Endangered Species Act is a federal law that is not bound by state lines so the possibility that Harding County may be impacted negatively is very real even though there is currently no Action Area, or current range within its boundaries. The decline in the livestock industry in Harding County not only affects the industry itself, but dozens of other businesses that the livestock industry supports statewide. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted. (Appendix Table 45: Top Ten Industries affected by the livestock industry in Harding County.)

Lea County, New Mexico

Impact Type	Direct Effect
Employment	100
Labor Income	\$ 24,013,186
Total Value Added	\$ 32,789,272
Output	\$ 77,239,143

IMPLAN 2013

Table 24- Lea County Direct Effect

The livestock industry in Lea County is comprised of the livestock ranching sector with estimated output (sales) of \$77.2 million (Table 24). The direct effects of the livestock industry also include more than \$32.79 million in value added (the local equivalent of gross domestic product, GDP), \$24 million in labor income (proprietor's income plus employee compensation), and 100 jobs (part- and full-time jobs).

Impact Type	Total Effect
Employment	313
Labor Income	\$ 39,170,710
Total Value Added	\$ 58,206,511
Output	\$ 128,110,707

IMPLAN 2013

Table 25- Lea County Total Effect

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy (Table 25). Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for

these multiplier effects, the total contribution of the livestock industry to the Lea County economy is \$128 million in output, \$58 million in value added, approximately \$39.2 million in labor income, and 313 total jobs.

Every 100 livestock industry jobs in Lea County supports an additional 210 jobs in other industries

The livestock industry in the Lea County supports 313 jobs. 100 of those jobs are directly attributed to the livestock industry and the additional 213 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multipliers
Employment	2.1
Labor Income	0.6
Total Value Added	0.8
Output	0.7

IMPLAN 2013

Table 26- Lea County Multipliers

- For every loss of 100 jobs in the livestock sector, 210 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$60 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$80 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$70 is lost to the economy.

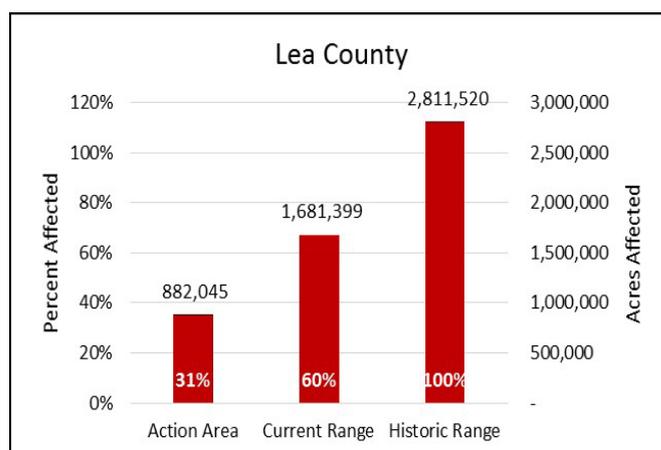


Figure 7- Lea County Acreage Affected

Figure 7 illustrates that 100 percent or 2,811,520 acres of Lea County lies within the Historic Range of the LPC, 60% or 1,681,399 acres in the current range, and 31% or 882,045 acres in the Action Area. If the Critical Habitat designation falls within the Historic Range, the county could see a devastating decline in its livestock industry. This decline not only affects the industry itself, but doz-

ens of other businesses that the livestock industry supports statewide. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted (Appendix Table 46: Top Ten Industries affected by the livestock industry in Lea County .)

occurs in other sectors of the New Mexico economy.

Quay County, New Mexico

Impact Type	Direct Effect
Employment	303
Labor Income	\$ 15,203,359
Total Value Added	\$ 20,024,768
Output	\$ 47,170,792

IMPLAN 2013

Table 27- Quay County Direct Effect

The livestock industry in Quay County is comprised of the livestock ranching sector with estimated output (sales) of \$47.2 million (Table 27). The direct effects of the livestock industry also include more than \$20 million in value added (the local equivalent of gross domestic product, GDP), \$15.2 million in labor income (proprietor's income plus employee compensation), and 303 jobs (part- and full-time jobs).

Impact Type	Total Effect
Employment	487
Labor Income	\$ 21,381,532
Total Value Added	\$ 30,645,318
Output	\$ 68,452,772

IMPLAN 2013

Table 28- Quay County Total Effect

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy (Table 28). Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the Quay County economy is \$68.5 million in output, \$30.6 million in value added, approximately \$21.4 million in labor income, and 487 total jobs.

Every 100 livestock industry jobs in Quay County supports an additional 60 jobs in other industries

The livestock industry in the Quay County supports 487 jobs. 303 of those jobs are directly attributed to the livestock industry and the additional 184 jobs are a result of economic activity stimulated by the livestock industry that

Multiplier Implications

Impact Type	Multipliers
Employment	0.6
Labor Income	0.4
Total Value Added	0.5
Output	0.5

IMPLAN 2013

Table 29- Quay County Multipliers

- For every loss of 100 jobs in the livestock sector, 60 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$40 is lost in the economy
- For every \$100 loss of value added from the livestock industry, \$50 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$50 is lost to the economy.

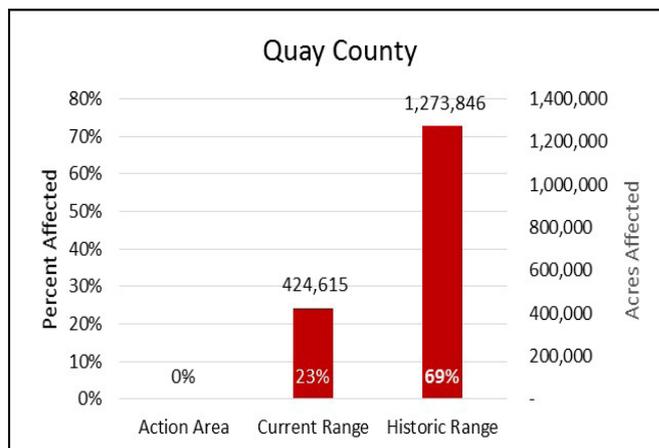


Figure 8- Quay County Acreage Affected

Figure 8 illustrates that 69 percent of Quay County or 1,273,846 acres lies within the Historic Range of the LPC, 23% or 424,615 acres in the current range, and 0% in the Action Area. If the Critical Habitat designation falls within the Historic Range, the County could see a devastating decline in its livestock industry. This decline not only affects the industry itself, but dozens of other businesses that the livestock industry supports statewide. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted (Appendix Table 47: Top Ten Industries affected by the livestock industry in Quay County.)

Roosevelt County, New Mexico

Impact Type	Direct Effect
Employment	130
Labor Income	\$ 26,912,213
Total Value Added	\$ 35,855,274
Output	\$ 84,461,487
IMPLAN 2013	

Table 30- Roosevelt County Direct Effects

The livestock industry in Roosevelt County is comprised of the livestock ranching sector with estimated output (sales) of \$84.5 million (Table 30). The direct effects of the livestock industry also include more than \$35.86 million in value added (the local equivalent of gross domestic product, GDP), \$26.9 million in labor income (proprietor's income plus employee compensation), and 130 jobs (part- and full-time jobs).

Impact Type	Total Effect
Employment	297
Labor Income	\$ 33,522,254
Total Value Added	\$ 48,475,777
Output	\$ 108,423,243
IMPLAN 2013	

Table 31- Roosevelt County Total Effects

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy (Table 31). Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the Roosevelt County economy is \$108.4 million in output, \$48.5 million in value added, approximately \$33.5 million in labor income, and 297 total jobs.

Every 100 Livestock industry jobs in Roosevelt County supports an additional 130 jobs in other industries

The livestock industry in the Roosevelt County supports 297 jobs. 130 of those jobs are directly attributed to the livestock industry and the additional 167 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multipliers
Employment	1.3
Labor Income	0.2
Total Value Added	0.4
Output	0.3
IMPLAN 2013	

Table 32- Roosevelt County Multipliers

- For every loss of 100 jobs in the livestock sector, 130 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$20 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$40 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$30 is lost to the economy.

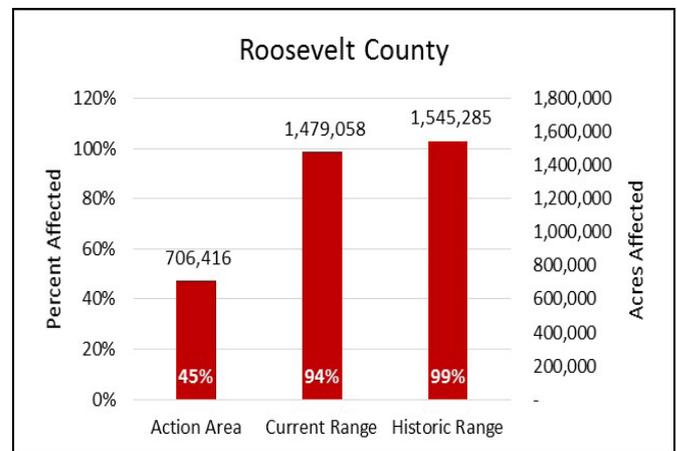


Figure 9- Roosevelt County Acreage Affected

Figure 9 illustrates that 99 percent of Roosevelt County or 1,545,285 acres lies within the Historic Range of the LPC, 94% or 1,479,058 acres in the current range, and 45% or 706,416 acres in the Action Area. If the Critical Habitat designation falls within the Historic Range, the county could see a devastating decline in its livestock industry. Dozens of other businesses that the livestock industry supports statewide could be affected. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted (Appendix Table 48: Top Ten Industries affected by the livestock industry in Roosevelt County.)

San Miguel County, New Mexico

Impact Type	Direct Effect
Employment	446
Labor Income	16,304,159
Total Value Added	20,960,293
Output	49,374,535
IMPLAN 2013	

Table 33- San Miguel County Direct Effects

The livestock industry in San Miguel County is comprised of the livestock ranching sector with estimated output (sales) of \$49.4 million (Table 33). The direct effects of the livestock industry also include more than \$20.96 million in value added (the local equivalent of gross domestic product, GDP), \$16.3 million in labor income (proprietor's income plus employee compensation), and 446 jobs (part- and full-time jobs).

Impact Type	Total Effect
Employment	684
Labor Income	22,868,237
Total Value Added	32,052,665
Output	71,335,464
IMPLAN 2013	

Table 34- San Miguel County Total Effects

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy. Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the San Miguel County economy is \$71.3 million in output, \$32 million in value added, approximately \$22.9 million in labor income, and 684 total jobs.

Every 100 livestock industry jobs in San Miguel County supports an additional 50 jobs in other industries

The livestock industry in the San Miguel County supports 684 jobs. 446 of those jobs are directly attributed to the livestock industry and the additional 238 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multipliers
Employment	0.5
Labor Income	0.4
Total Value Added	0.5
Output	0.4
IMPLAN 2013	

Table 35- San Miguel County Multipliers

- For every loss of 100 jobs in the livestock sector, 50 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$40 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$50 is lost in the economy.
- For every \$100 loss of output from the livestock sector, \$40 is lost to the economy.

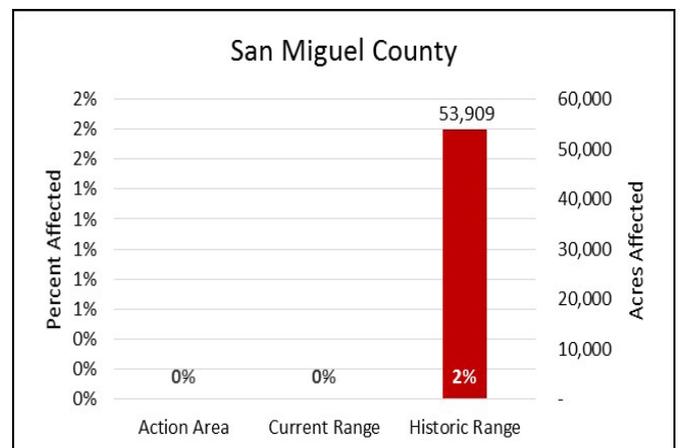


Figure 10- San Miguel County Acreage Affected

Figure 10 illustrates that 2 percent of San Miguel County or 53,909 acres lies within the Historic Range of the LPC, 0% in the current range, and 0% in the Action Area. Of all of the 10 Counties, San Miguel County will be affected the least however, the possibility that the Critical Habitat could be extended into San Miguel County is a cause for concern. Dozens of other businesses that the livestock industry supports statewide could be affected. From banking to wholesale establishments, real estate to food services, dozens of small businesses will be negatively impacted (Appendix Table 49 : Top Ten Industries affected by the livestock industry in San Miguel County.)

Union County, New Mexico

Impact Type	Direct Effect
Employment	249
Labor Income	\$ 27,214,601
Total Value Added	\$ 34,792,818
Output	\$ 81,958,740

IMPLAN 2013

Table 36- Union County Direct Effects

The livestock industry in Union County is comprised of the livestock ranching sector with estimated output (sales) of \$81.96 million (Table 36). The direct effects of the livestock industry also include more than \$34.8 million in value added (the local equivalent of gross domestic product, GDP), \$27.2 million in labor income (proprietor's income plus employee compensation), and 249 jobs (part- and full-time jobs).

Impact Type	Total Effect
Employment	403
Labor Income	\$ 31,883,074
Total Value Added	\$ 43,961,224
Output	\$ 99,850,364

IMPLAN 2013

Table 37- Union County Total Effects

Economic activity of the livestock industry also has multiplier effects, generating additional jobs and sales in other sectors of the local economy (Table 37). Indirect effects account for Livestock industry purchases of inputs, while induced effects account for proprietor and employee spending from their incomes. These multiplier effects provide additional stimulus to the local economy. Accounting for these multiplier effects, the total contribution of the livestock industry to the Union County economy is \$99.8 million in output, \$43.96 million in value added, approximately \$31.88 million in labor income, and 403 total jobs.

Every 100 livestock industry jobs in Union County supports an additional 60 jobs in other industries

The livestock industry in the Union County supports 403 jobs. 249 of those jobs are directly attributed to the livestock industry and the additional 154 jobs are a result of economic activity stimulated by the livestock industry that occurs in other sectors of the New Mexico economy.

Multiplier Implications

Impact Type	Multipliers
Employment	0.6
Labor Income	0.2
Total Value Added	0.3
Output	0.2

IMPLAN 2013

Table 38- Union County Multipliers

- For every loss of 100 jobs in the livestock sector, 60 jobs are lost in the economy.
- For every \$100 loss of labor income from the livestock sector, \$20 is lost in the economy.
- For every \$100 loss of value added from the livestock industry, \$30 is lost in the economy .
- For every \$100 loss of output from the livestock sector, \$20 is lost to the economy.

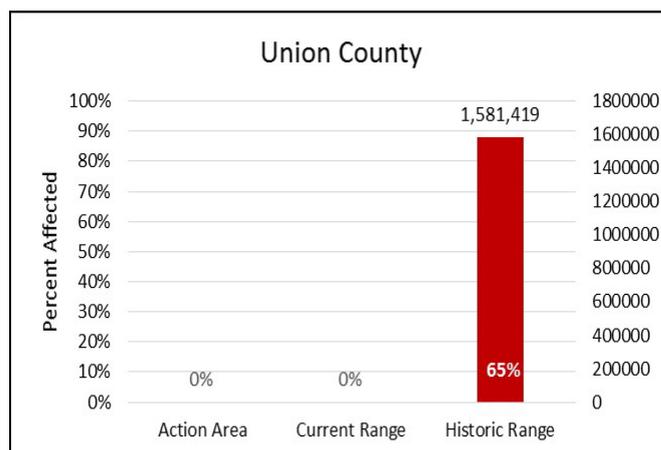


Figure 11- Union County Acreage Affected

Figure 11 illustrates that 65 percent of Union County or 1,581,419 acres lies within the Historic Range of the LPC, 0% in the current range, and 0% in the Action Area. If the Critical Habitat designation falls within the Historic Range, the county could see a devastating decline in its livestock industry because of Critical Habitat designation in Kansas from the northeast and Texas from the east. The Endangered Species Act is a federal law that is not bound by state lines, so the possibility that Union County may be impacted negatively is very real even though there is currently no Action Area, or Current Range within its boundaries. Not only will the livestock industry be affected if Critical Habitat is designated within Union County, dozens of other businesses will feel the affects (Appendix Table 50: Top Ten Industries affected by the livestock industry in Union County.)

Discussion

The Endangered Species Act, and more specifically Critical Habitat designation has failed in its purpose because it uses a command approach to the endangered Species issue. In other words, it orders people to act to save endangered species. A command economy is where both supply and price are regulated by the central government rather than market forces. Goods and services are produced and distributed according to the dictates of the government. The former Soviet Union eventually realized that this type of economy is not sustainable.

If the overall goal of the Endangered Species Act is to save endangered species, then the approach must emphasize incentive, rather than command. The best system is the market system in the U.S. that responds quickly to need, learns quickly from failure, and assesses trade-offs and costs fairly to everyone. Arguably, the failure of the Endangered Species Act could be summarized by saying that a public law that has a command economic approach in a demand economy cannot succeed.

Economists view biodiversity and endangered species as a “public good.” Public goods are not owned by the public, but goods anyone can use because it is impossible to exclude anyone from benefitting from them. National defense is a popular example. Everyone in the United States are “defended” whether or not they pay for it or not. Because of the fact that everyone shares the benefits of species protection, endangered species are a public good.

Arriving at a definition that endangered species is a public good however, doesn't necessarily solve the problem because, markets handle public goods poorly because markets are based on individual transactions. Since no one can be excluded from public goods, it creates ample opportunity for the general public to become “free riders”.

The simple solution for this problem is to make the assumption that land owners are the owners of the habitat. If rancher A wants to graze cattle on rancher B's property, rancher A must pay rancher B to do so. In like manner the owner of the wildlife must pay rancher A and B for habitat use if they want the species to thrive. The current practice of shifting the burden of protecting habitat to a few landowners does not reduce the cost, it just makes a few ranchers pay for something that benefits everyone. The correct method would be to make society as a whole pay the costs, not just the few landowners who find themselves in the position of having endangered species on their property. This method is the best way to proceed not only because it is fair, but because it is far superior to the alternative; that of threatening to take people's land with-

out compensation.

The 10 eastern Counties in New Mexico are a prime example. Critical habitat designation that reduces livestock by any measure will have an impact not only on the industry itself, but numerous other ancillary businesses, and citizens in the region. It will reduce employment, labor income and total output.

The rest of the nation therefore becomes a free rider because they receive the benefit of the endangered species protection at the expense of a few. There is no clear evidence that the U.S. fish and Wildlife Services' assessment that the Lesser Prairie Chicken (LPC) is in decline is real. Sources within the New Mexico Fish and Wildlife Service believe that if there is a decline in LPC populations it is purely cyclical and correlated to weather conditions. According to Jim Lane, the LPC has had low numbers over the past fifty years but has recovered each and every time when rainfall increased, and has nothing to do with human encroachment as proponents of the LPC listing suggest.

The listing and subsequent Critical Habitat designation of the LPC may be viewed by some as an incidental inconvenience however, to the hundreds of individuals and families whose lives and livelihoods are disrupted; it is a life altering event. While this publication deals primarily with the livestock industry in the 10 county region, other sectors that will be addressed in subsequent publications will also see adverse challenges to their businesses. The dairy, and petroleum industries in the region under study will be affected by the listing and Critical Habitat designation of the LPC as well. The three sectors; livestock, dairy, and petroleum account for the vast majority of the output for the region.

Conclusion

The livestock industry in the 10 counties under study is a vibrant and ongoing concern that support jobs and businesses throughout the region and state. Disruption of this vital industry through Critical Habitat designation under the ESA will be felt throughout the regional and state economy.

There is significant controversy over the listing of the LPC due to reports by reputable organizations that claim the listing criteria were not met and that LPC populations were not in decline. Millions of dollars of economic activity could be disrupted, and hundreds of jobs lost when Critical Habitat is designated based on science that has not been thoroughly researched or proved. Because the Lesser Prairie Chicken requires large parcels of intact native grassland and shrub land, often in excess of 20,000

acres to maintain self-sustaining populations, it is likely that ranchers will face more challenges to grazing, allowing only a certain number of livestock on particular rangeland, or limiting the length of time they are allowed to graze. Inevitably this leads to reduced herd numbers that then equates to reduced output, reduced value added, reduced labor income and reduced employment. This reduction in these critical areas can be measured through the use of multipliers.

Multipliers are numbers which measure the magnitude of the direct, indirect, and induced effects that a given amount of production or expenditure has on a region or community. They are a useful way to predict the change to an economy due to a policy or legislative change. Analyzing the multipliers from IMPLAN, the data clearly shows that in decreases in livestock production will negatively impact the county, state and regional economies severely. Not only will the livestock industry be negatively impacted, but local businesses and firms will also feel the affect (See Appendix: top ten affected industries Tables.)

Business enterprises are not standalone entities that can ebb and flow independent of each other. Rural economies are co-dependent; relying on the economic health of all to remain healthy themselves. Top tier economic engines such as the livestock industry buy goods and services from smaller local businesses. When those purchases are curtailed the impact is immediate. Ultimately, the lost revenue to small business from the livestock industry will negatively affect the average citizen in the county, region,

and state as the economic consequences of Critical Habitat designation trickle down to the personal level.

The acreage designated for Critical Habitat for the LPC must be as small as possible in order to protect private property rights. If Critical Habitat is designated in the Historic Range of the LPC, the 10 county region's \$1.14 billion livestock industry will see a devastating decline in output, which will then affect the statewide \$2.1 billion livestock industry negatively.

The majority of livestock grazing activity in New Mexico takes place in the 10 eastern New Mexico counties targeted by Critical Habitat designation for the LPC. The partial reason that the LPC is in existence at all today, is because of the livestock industry in New Mexico, especially in the 10 counties of eastern New Mexico. Perpetuating a sustainable livestock business requires careful range management that ultimately benefits the Lesser Prairie Chicken; the livestock industry has done so for decades.

Appendix

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming,	8,786	\$ 607,863,055	\$ 804,898,512	\$ 1,896,037,193
Wholesale trade	453	\$ 24,661,283	\$ 50,641,208	\$ 85,691,830
Owner-occupied dwellings	0	\$ -	\$ 53,172,219	\$ 74,640,480
Petroleum refineries	8	\$ 1,212,958	\$ 9,699,962	\$ 73,320,133
Real estate	295	\$ 3,435,978	\$ 46,843,538	\$ 58,368,781
Support activities for agriculture and forestry	1,247	\$ 31,017,623	\$ 34,746,428	\$ 47,994,411
Truck transportation	296	\$ 18,972,137	\$ 21,471,029	\$ 47,420,804
All other crop farming	603	\$ 25,811,383	\$ 26,757,132	\$ 43,543,270
Other animal food manufacturing	29	\$ 1,521,744	\$ 2,844,214	\$ 40,177,097
Extraction of natural gas and crude petroleum	47	\$ 5,703,333	\$ 20,999,328	\$ 28,633,920

IMPLAN 2013
Table 39- Statewide, Top 10 Affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	2,235	\$ 315,719,643	\$ 418,635,322	\$ 986,146,715
Petroleum refineries	5	\$ 812,192	\$ 6,099,239	\$ 45,729,526
Wholesale trade	177	\$ 10,264,589	\$ 20,404,830	\$ 34,070,289
Owner-occupied dwellings	0	\$ -	\$ 21,615,769	\$ 30,343,130
Other animal food manufacturing	21	\$ 1,106,972	\$ 2,057,717	\$ 28,896,654
Truck transportation	170	\$ 11,611,303	\$ 13,042,263	\$ 27,946,466
All other crop farming	153	\$ 14,435,753	\$ 14,790,459	\$ 24,069,286
Real estate	112	\$ 898,017	\$ 17,392,647	\$ 21,758,939
Extraction of natural gas and crude petroleum	29	\$ 4,022,658	\$ 13,559,793	\$ 18,344,516
Support activities for agriculture and forestry	295	\$ 10,020,630	\$ 10,907,948	\$ 14,051,687

IMPLAN 2013
Table 40- 10 County, Top 10 affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	131	\$ 43,896,607	\$ 58,933,333	\$ 138,824,678
Wholesale trade	29	\$ 1,405,286	\$ 3,084,709	\$ 5,354,976
Owner-occupied dwellings	0	\$ -	\$ 3,310,076	\$ 4,646,518
Real estate	20	\$ 102,624	\$ 3,021,281	\$ 3,793,045
All other crop farming	13	\$ 2,005,731	\$ 2,090,989	\$ 3,402,776
Support activities for agriculture and forestry	49	\$ 2,284,662	\$ 2,433,288	\$ 2,962,441
Monetary authorities	13	\$ 634,129	\$ 1,385,887	\$ 2,486,898
Truck transportation	11	\$ 593,585	\$ 682,657	\$ 1,604,219
Hospitals	9	\$ 743,561	\$ 829,665	\$ 1,405,007
Other animal food manufacturing	1	\$ 50,568	\$ 92,339	\$ 1,271,460

IMPLAN 2013
Table 41- Chaves County, top 10 Affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	191	\$ 75,537,504	\$ 101,135,508	\$ 238,237,065
Petroleum refineries	1	\$ 133,663	\$ 1,477,386	\$ 11,552,664
Owner-occupied dwellings	0	\$ -	\$ 4,623,532	\$ 6,490,281
All other crop farming	19	\$ 3,496,564	\$ 3,576,835	\$ 5,820,770
Real estate	27	\$ 223,087	\$ 4,237,406	\$ 5,300,104
Wholesale trade	29	\$ 1,192,200	\$ 2,858,057	\$ 5,114,777
Support activities for agriculture and forestry	85	\$ 2,693,408	\$ 2,949,691	\$ 3,856,840
Monetary authorities	16	\$ 818,711	\$ 1,712,844	\$ 3,022,547
Hospitals	19	\$ 1,607,408	\$ 1,789,311	\$ 3,005,462
Truck transportation	19	\$ 769,363	\$ 932,393	\$ 2,621,269

IMPLAN 2013

Table 42- Curry County , Top 10 affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	88	\$ 8,757,667	\$ 11,303,123	\$ 26,625,890
Wholesale trade	7	\$ 88,422	\$ 501,531	\$ 1,066,087
Truck transportation	8	\$ 30,723	\$ 47,535	\$ 777,856
Owner-occupied dwellings	0	\$ -	\$ 536,962	\$ 753,760
All other crop farming	9	\$ 508,629	\$ 414,165	\$ 673,993
Extraction of natural gas and crude petroleum	1	\$ 4,500	\$ 140,193	\$ 330,358
Securities and commodity contracts	4	\$ 2,269	\$ 3,938	\$ 226,778
Electric power transmission and distribution	0	\$ 10,949	\$ 29,553	\$ 182,832
Other local government enterprises	1	\$ 37,843	\$ 47,210	\$ 151,480
Monetary authorities	1	\$ 34,267	\$ 81,428	\$ 150,486

IMPLAN 2013

Table 43- De Baca County, Top 10 Affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	121	\$ 18,789,683	\$ 25,237,966	\$ 59,451,117
Petroleum refineries	0	\$ 50,841	\$ 394,346	\$ 2,969,243
Wholesale trade	9	\$ 692,726	\$ 1,209,379	\$ 1,901,613
Truck transportation	10	\$ 797,539	\$ 882,897	\$ 1,764,502
Support activities for agriculture and forestry	34	\$ 1,278,077	\$ 1,380,547	\$ 1,744,106
Owner-occupied dwellings	0	\$ -	\$ 1,225,779	\$ 1,720,687
All other crop farming	12	\$ 834,940	\$ 873,302	\$ 1,421,170
Real estate	6	\$ 48,063	\$ 894,242	\$ 1,118,264
Hospitals	6	\$ 459,532	\$ 516,226	\$ 894,496
Monetary authorities	4	\$ 228,018	\$ 463,458	\$ 808,359

IMPLAN 2013

Table 44- Eddy County, Top 10 Affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	153	\$ 12,742,987	\$ 15,956,107	\$ 37,586,563
Wholesale trade	16	\$ 127,079	\$ 1,021,468	\$ 2,245,271
Owner-occupied dwellings	0	\$ -	\$ 593,917	\$ 833,711
Extraction of natural gas and crude petroleum	1	\$ 4,089	\$ 259,289	\$ 376,831
Electric power transmission and distribution	0	\$ 38,445	\$ 47,803	\$ 229,095
Monetary authorities	1	\$ 64,791	\$ 109,933	\$ 176,120
Offices of physicians	3	\$ 15,187	\$ 18,882	\$ 132,760
Legal services	2	\$ 26,202	\$ 28,821	\$ 119,060
Automotive repair and maintenance	1	\$ 10,537	\$ 49,532	\$ 94,391
Retail - Nonstore retailers	1	\$ 8,244	\$ 34,204	\$ 72,021

IMPLAN 2013

Table 45- Harding County, Top 10 Affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	123	\$ 29,546,926	\$ 40,345,426	\$ 95,038,588
Petroleum refineries	0	\$ 95,479	\$ 560,688	\$ 4,046,744
Wholesale trade	16	\$ 1,197,384	\$ 2,129,422	\$ 3,379,451
Truck transportation	16	\$ 1,207,900	\$ 1,343,304	\$ 2,742,176
Owner-occupied dwellings	0	\$ -	\$ 1,791,896	\$ 2,515,374
All other crop farming	13	\$ 1,238,430	\$ 1,462,166	\$ 2,379,459
Extraction of natural gas	3	\$ 422,495	\$ 1,471,369	\$ 1,980,285
Real estate	9	\$ 121,927	\$ 1,438,810	\$ 1,788,146
Hospitals	6	\$ 415,628	\$ 475,430	\$ 873,157
Monetary authorities	4	\$ 183,781	\$ 416,283	\$ 756,769

IMPLAN 2013

Table 46- Lea County, Top 10 Affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	342	\$ 17,155,439	\$ 22,595,907	\$ 53,227,425
Owner-occupied dwellings	0	\$ -	\$ 1,301,319	\$ 1,826,726
Truck transportation	12	\$ 449,898	\$ 550,434	\$ 1,592,077
All other crop farming	35	\$ 882,585	\$ 810,990	\$ 1,319,766
Monetary authorities	5	\$ 223,160	\$ 527,011	\$ 971,935
Wholesale trade	6	\$ 146,911	\$ 480,100	\$ 933,640
Hospitals	6	\$ 420,145	\$ 481,322	\$ 888,093
Real estate	4	\$ 24,181	\$ 635,024	\$ 796,585
Electric power transmission	0	\$ 50,081	\$ 92,181	\$ 439,026
Other local government enterprises	2	\$ 82,989	\$ 111,359	\$ 426,732

IMPLAN 2013

Table 47- Quay County, Top 10 Affected Industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming,	135	\$ 27,904,085	\$ 37,176,750	\$ 87,574,386
Owner-occupied dwellings	0	\$ -	\$ 1,816,576	\$ 2,550,018
Truck transportation	16	\$ 742,975	\$ 880,887	\$ 2,308,937
All other crop farming	13	\$ 1,268,639	\$ 1,255,284	\$ 2,042,790
Real estate	11	\$ 54,179	\$ 1,605,628	\$ 2,015,863
Wholesale trade	5	\$ 178,242	\$ 486,171	\$ 904,320
Monetary authorities	5	\$ 205,752	\$ 474,846	\$ 868,900
Electric power transmission	1	\$ 53,116	\$ 118,706	\$ 659,098
Other local government enterprises	2	\$ 147,422	\$ 178,737	\$ 527,644
Wired telecommunications carriers	1	\$ 57,505	\$ 173,691	\$ 524,742

IMPLAN 2013

Table 48- Roosevelt County Top 10 Affected industries

Description	Total Employment	Total Labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	511	\$ 18,679,631	\$ 24,014,151	\$ 56,568,272
Owner-occupied dwellings	0	\$ -	\$ 1,340,664	\$ 1,881,957
Support activities for agriculture and	53	\$ 664,868	\$ 823,211	\$ 1,379,446
Real estate	6	\$ 22,995	\$ 889,885	\$ 1,119,001
Truck transportation	7	\$ 265,550	\$ 326,006	\$ 952,426
Wholesale trade	5	\$ 126,428	\$ 423,383	\$ 827,708
Hospitals	6	\$ 356,072	\$ 415,685	\$ 811,069
Monetary authorities	4	\$ 179,325	\$ 417,327	\$ 765,843
All other crop farming	18	\$ 373,928	\$ 297,822	\$ 484,661
Electric power transmission	0	\$ 36,747	\$ 79,798	\$ 434,492

IMPLAN 2013

Table 49- San Miguel County, Top 10 Affected Industries

Description	Total Employment	Total labor Income	Total Value Added	Total Output
Beef cattle ranching and farming	250	\$ 27,361,074	\$ 34,980,078	\$ 82,399,856
Owner-occupied dwellings	0	\$ -	\$ 1,810,069	\$ 2,540,883
Wholesale trade	14	\$ 125,557	\$ 900,377	\$ 1,960,203
Hospitals	9	\$ 659,397	\$ 746,158	\$ 1,324,224
All other crop farming	16	\$ 997,685	\$ 770,758	\$ 1,254,295
Monetary authorities	6	\$ 272,420	\$ 603,079	\$ 1,087,338
Wired telecommunications carriers	2	\$ 70,604	\$ 205,889	\$ 614,594
Electric power transmission	0	\$ 47,330	\$ 103,935	\$ 570,289
Other local government enterprises	2	\$ 133,080	\$ 167,037	\$ 544,997
Securities and commodity	9	\$ 9,789	\$ 13,117	\$ 457,229

IMPLAN 2013

Table 50- Union County, Top 10 Affected Industries