

**Weminuche Landscape Grazing Analysis**  
**Social and Economic Specialist Report**

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## **SOCIAL AND ECONOMIC INTRODUCTION**

The social and economic implications of forest resource management are of interest to local residents surrounding federal lands, forest users, and other people throughout the area. The project area contains approximately 89,260 acres in La Plata County, approximately 65,480 acres in Hinsdale County, and approximately 11,890 acres in San Juan County, Colorado.

The current grazing permittees, along with their families, business managers, and ranch hands, primarily live in La Plata County. The communities most likely to be impacted by this project are those in which the permittees and/or their primary business managers live, pay taxes, and do business. Those communities include Durango, Bayfield, and Ignacio and are all located within La Plata County.

Some of the livestock are pastured in San Juan County, New Mexico during part of the winter months while they are not on federal lands. However, economic effects of this pasturing are limited to pasture leases with a few landowners, with most other business expenses concentrated in La Plata County, Colorado; therefore this analysis focuses mostly on the economic conditions in La Plata County. Nevertheless, National Forest System (NFS) land management decisions are only one of many factors that can influence local economic conditions – which are affected by broader regional economic conditions. In order to provide proper context, this affected environment section begins with an overview of Colorado’s Four Corners region’s economic base, including relevant employment and income statistics.

In addition to these grazing opportunities, the area is used by residents and visitors for recreation activities, including hunting and wildlife viewing of bighorn sheep. Specific recreation analysis is highlighted in the Recreation section of this document, and potential impacts to bighorn sheep are outlined by alternative in the Wildlife section of this document. This section highlights the importance of tourism and bighorn sheep in the area to people that have expressed these values, in contrast to the values and benefits provided through the grazing program.

### **Affect Environment**

#### **Geography**

La Plata County, in southwestern Colorado, encompasses approximately 1,087,000 acres (or 1,700 square miles) of land area, the 27<sup>th</sup> largest county in the state. La Plata County contains major corridors for both east-west travel, Highway 160, and north-south travel, Highway 550. River systems running through the county include the La Plata, the Animas, the Florida, and the Pine. The federal government manages approximately 39 percent of the land base within La Plata County; the majority is within the San Juan National Forest.

#### **Demographics**

La Plata County includes the population center and county seat, Durango. The County has about 52,000 residents (2013), the 15<sup>th</sup> most populated county in Colorado. With a population change of 18 percent between 2000 and 2013, La Plata County’s percent of population change was about

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the same as that as the state's percent of population change, and higher than the nation's. La Plata's median age has also increased faster than both the state and national average. Between 2000 and 2013 the County's median age increased from 35.6 to 38.3. The state's median age is 36.1 and nationally the median age is 37.3. This increase in La Plata's median age highlights the number of retirees coming into the area, attracted to the quality of life and lifestyle amenities the area offers.

## Environmental Justice

Executive Order (EO) 12898 directs federal agencies to focus attention on the human health and environmental conditions for minority and low-income populations. The purpose of EO 12898 is to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations.

La Plata County is not very diverse racially, compared to the state or nationally. Table 1 highlights the percent of the total population in 2013 in the basic race categories from the American Community Survey for the U.S., Colorado, and La Plata County. With Ute Mountain Ute and Southern Ute reservations nearby, the American Indian population in La Plata County is higher than both the state and national averages. And ethnically, the Hispanic and Latino population is slightly higher in La Plata County (about 17 percent) than the state's average of 12 percent, but still less than the U.S. average of 21 percent. Otherwise, the county has limited diversity.

**Table 1. Percent of Total Population by Race, 2013.**

	U.S.	Colorado	La Plata County
Percent of Total Population			
White	74.0%	84.0%	87.9%
Black or African American	12.6%	4.0%	0.5%
American Indian	0.8%	1.0%	6.0%
Asian	4.9%	2.8%	0.7%
Native Hawaiian & Other Pacific Islander	0.2%	0.1%	0.1%
Some other race	4.7%	4.7%	2.8%
Two or more races	2.8%	3.4%	2.0%

The data in this table are calculated by American Community Survey using annual surveys conducted during 2009-2013 and are representative of average characteristics during this period.

Poverty is an important indicator of economic well-being. For public land managers, understanding the extent of poverty is important for several reasons. First, people with limited income may have different needs, values, and attitudes as they relate to public lands. Second, proposed activities on public lands may need to be analyzed in the context of whether people who are economically disadvantaged could experience disproportionately high and adverse effects under EO 12898. Table 2 below highlights the percent of the population below the poverty level in 2013. La Plata County appears to have fewer individuals and families living under the poverty level than both the state and national averages.

**Table 2. Percent of Total Population by Poverty Level, 2013.**

	U.S.	Colorado	La Plata County
Percent of Total Population			
People Below Poverty	15.4%	13.2%	11.4%
Families below poverty	11.3%	9.1%	6.9%

The data in this table are calculated by American Community Survey using annual surveys conducted during 2009-2013 and are representative of average characteristics during this period.

## Regional Economics

In 2015, Colorado's economy continues to improve, largely outperforming the rest of the nation in recent years. Despite relatively robust job growth, Colorado is burdened by the legacy of two acute recessions in 2001 and 2007-2009 that have caused divergences in job recovery rates between the state's metro, and economically diverse Front Range counties that are recovering faster than the smaller, less economically diverse counties in the Central Mountains, Western Slope and elsewhere (CODOLA 2014a). A closer look at Colorado's Four Corners region<sup>1</sup> reveals that the area had approximately 50,440 wage earners and self-employed jobs in 2012. The largest sources of jobs came from the following sectors;

Government (19%),  
Retail (11%),  
Health Services (11%) and  
Accommodations / Food Services (10%).

Residents in the Four Corners region receive about 61 percent of their income from earnings, which is lower than the state average of 70 percent. Similarly, the share of government transfers (government payments to individuals) was at 16 percent compared to the state average at 13 percent. These reflect the region's slightly larger share of retirees (people over 65) than the state as a whole (CODOLA 2012).

Another approach to assess the relative significance of different industries in a local economy is through an 'Economic Base Analysis'. This approach looks at how different sectors (e.g. individual industrial sectors and the household sector) bring money into an area and contribute to additional employment throughout the economy. An Economic Base Analysis begins with dividing employment and personal income into two groups:

- (1) those that bring in outside dollars to the area and thus are 'basic' to the local economy (directly or indirectly), and
- (2) those that are the result of 'basic' spending for local services.

Technical detail on Economic Base Analyses is documented by Colorado's State Demographer's Office (CODOLA 2011). According to an Economic Base Analysis for the Four Corners Region, households (especially spending/non-labor income from retirees) bring in the most significant amounts of money and support about 8,700 jobs in the Four-Corner region; this is followed by the tourism sector, another significant driver generating nearly 8,500 jobs. Agricultural sectors support about 2,600 jobs in the region (CODOLA 2012).

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<sup>1</sup> Consists of Archuleta, La Plata, Montezuma, San Juan and Dolores Counties.

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## The Economic Environment of La Plata County

Residents in La Plata County receive about 61 percent of their income from labor earnings, 27.4 percent from dividends, interests/rents, and 11.5 percent from government transfers (such as retirement and medical payments to individuals). The county had approximately 38,000 wage earners and self-employed jobs in 2013. Major sources of employment are from the following industries;

- Government (15%),
- Retail (10%),
- Health Services (9.8%),
- Construction (9.6%) and
- Accommodations / Food Services (9.1%) (U.S. Department of Commerce 2014).

In terms of wages, the top five industries with the highest annual average wages in the county were;

- Mining (\$99,002),
- Information service (\$56,111),
- Financial activities (\$55,518),
- Government (\$50,399) and
- Professional / business services (\$49,285).

Across all industries, the average earning per job and per capita personal income are \$44,405 and \$46,633, respectively. Since 1990, the annual unemployment rate ranged from a low of 2.8 percent in 2007 to a high of 7.1 percent in 2010. The county's unemployment rate was 5.5 percent in 2013 (US Department of Labor 2014).

A 2013 Economic Base Analysis reveals that the most significant drivers in the county, generating or supporting jobs include;

- The tourism sector, 5,920 jobs
- Households (especially spending/non-labor income from retirees), 4,385 jobs
- The government sector, 2,355 jobs,
- Education and health services, 1,970 jobs, and
- The agribusiness sector, 1,570 jobs (CODOLA 2013).

## Tourism and the Recreation Economy

Prior to examining the sector that is directly related to this grazing management environmental analysis (the sheep and lamb industry); the tourism industry – La Plata County's lead economic driver – is discussed here first. Tourism is generally a labor-intensive industry; jobs include those in the trade, service, and lodging sectors. From the employment and wages statistics discussed previously, it is evident that while tourism related sectors such as retail and accommodations/food service are one of the top five major sources of employment in the county, they are not one of the top industries in terms of average wages. Nonetheless, the industry creates ripple effects across the local economy, benefiting other non-tourism oriented sectors such as construction, real estate, and governments. For example, travelers to La Plata County who stayed overnight spend a total of \$253.5 million in 2013, generating \$7.2 million in local taxes and \$5.8 million in State taxes (Dean Runyan Associates 2014).

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Visitors come to La Plata County for a variety of reasons; from general sightseeing, skiing, snowmobiling, hunting, fishing, rafting, hiking, biking, wildlife viewing, and to specific destination events such as film festivals. The San Juan National Forest provides opportunities and settings for many of these activities. The latest Forest Service National Visitor Use Monitoring (NVUM) report documented a total of 1.2 million visits to the San Juan National Forest in 2011. A 'visit' is defined as the entry of one person upon the forest to participate in recreation activities for an unspecified period of time. A National Forest visit can be composed of multiple site visits to different parts of the forest (NVUM 2015). Some of the most popular primary (main) activities for the San Juan National Forest include;

- Hiking/Walking (23% main participation rate),
- Relaxing (28%),
- Downhill Skiing (12%), and
- Viewing Natural Features (9.8%).

Note that although surveyed visitors were asked to identify their main recreational activity, they were also asked to provide information about other activities participated. Most national forest visitors participate in several recreation activities during each visit. For example, although only 1.6% of the visitors to the San Juan National Forest identified Wildlife Viewing as their main recreational activity, the survey revealed that 45% of all visitors *participated* in Wildlife Viewing. Other less common recreation activities include;

- Motorized Water Activities (1.4% participation, 0.2% main activity),
- Cross-country Skiing (0.6% participation, 0.3% main activity),
- Hunting (0.4% participation, 0.3% main activity),
- Snowmobiling (0.2% participation, 0.2% main activity) and
- Other Motorized Activity (0.9% participation, 0.2% main activity).

Visitors traveling to the San Juan National Forest spend an average of \$723 (median = \$200) per party on an average trip. About 58 percent of the visits include an overnight stay away from home, staying on average 6 nights per visit. Of those overnight visitors, 51 percent stayed at campgrounds on the forest while 23 percent rented private homes. Other modes of lodging include;

- Staying at Home of Friends/Family (10%),
- Undeveloped Camping on the Forest (8%),
- Stay at Own Home (6%),
- Staying at a Private Campground (4%),
- Staying in an Other Public Campground (4%),
- Using National Forest System Cabins (3%) and,
- Some Other Lodging (1%).

Overnight visitors and day-trip visitors both spend their disposable income in the local communities, supporting the regional economy. Based on the above NVUM data and Forest Service agency economic contribution analysis (multipliers generated with 2012 IMPLAN Input-Output model), San Juan National Forest's visitors spending contributed to more than 700 full and part time jobs, approximately \$21 million in labor income and \$34 million in Gross Regional Product (GRP) (which contributes to the Nation's Gross Domestic Product (GDP)) to the local

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economy. Due to data availability, Forest Service visitation and economic contribution information are available at the national, regional, and forest level, and not at the county or ranger district level. Nonetheless, forest-wide information provide important context on the types of recreation – and associated economic effects – that occur in the region.

Recreational use within the project area is high in some portions of the project area, especially with infrastructure such as trailheads, campgrounds, and trails and scenic or natural features such high alpine lakes, wildflowers, meadows, or wilderness solitude. Unfortunately, many of the same features/infrastructure that are used by recreational users are also necessary for domestic sheep grazing – thus creating user conflicts. In some cases, seeing the sheep grazing is a unique view for a visitor to the area and no conflict exists, but for more local or regular users, the sheep are seen as a negative.

Conflict can be a one-way behavior, meaning one group (recreational users) has conflict with the other group (sheep grazing), but the second group has no conflict with the first group. The conflict for recreational users can be direct; the actions of sheep grazing (destruction of wildflowers, site/smell of manure, aggressive guard dogs, etc.) directly affect a person's ability to complete their recreational activity. Or the conflict can be one of social values, in that those recreating in the area have personal beliefs about sheep grazing on NFS lands, even if they do not actually encounter sheep while recreating.

### ***Rocky Mountain bighorn sheep***

Although wildlife viewing and hunting represented a small portion of the primary recreation activities on the San Juan National Forest (see above statistics), they also occur outside of NFS lands, and provide additional economic benefits not accounted for above. One example is the importance of Rocky Mountain bighorn sheep – a Forest Service Rocky Mountain Regional Terrestrial Sensitive Wildlife Species – to the tourism economy. Bighorn sheep are a sought after big game species for both recreation hunters and wildlife viewers alike. In 2014, the State of Colorado, Colorado Parks and Wildlife (CPW) had 11,357 residents and 3,481 nonresidents applied for the bighorn limited license drawing, 230 residents and 24 nonresident were selected. Overall, CPW issued 262 hunting licenses (203 rams and 59 ewes) for Rocky Mountain bighorn sheep to a total of 232 hunters; the total harvest was 132 (109 rams and 23 ewes) with a 57 percent success rate (59% for rams and 50% for ewes) (CPW 2015).

The Bighorn Sheep Game Management Unit specific to La Plata County include S71 and parts of S28. These units issued a total of 3 licenses (3 rams) for 3 hunters in 2014, where 2 harvests were successfully made<sup>2</sup>. The opportunity to hunt a bighorn sheep is made available through drawing or raffle sold through the Rocky Mountain Bighorn Society for \$25 per ticket. The cost of the actual hunting license for a Rocky Mountain bighorn in 2015 was \$254 for residents and \$2064 for non-residents. Other secondary markets – such as auctions – exist and generally a much higher price per license is procured. Special auction and raffle licenses for Rocky

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<sup>2</sup> GMU S16 is also relevant to this landscape. This unit issued a total of 5 licenses in 2013 (3 rams and 2 ewes) to 5 hunters, where 5 harvests were successfully made (3 rams and 2 ewes).

Mountain bighorn are offered by participating wildlife conservation organizations that return at least 75 percent of the proceeds to CPW for research, management and education.

Further, recreation hunting and wildlife viewing in general contribute to the regional economy through visitor spending in nearby communities. In Colorado's southwest region, economic value generated by wildlife viewing and hunting has been estimated and displayed in Table 3.

**Table 3. Economic Contributions from Wildlife Viewing and Hunting to the Southwest Colorado Region, and La Plata County, 2014.**

	<b>Wildlife Viewing, Southwest Region</b>	<b>Hunting, Southwest Region</b>	<b>La Plata County Hunting</b>
	----- in millions -----		
<b>Economic output</b>	\$213	\$82	\$11
<b>State and local taxes</b>	\$16	\$6	\$.833
<b>Federal taxes</b>	\$14	\$6	\$.797
<b>Gross domestic product</b>	\$117	\$51	\$6.9
	-----average annual-----		
<b>Salaries and wages</b>	\$69 million	\$31 million	\$4.3 million
<b>Full and part time jobs</b>	2,135	1,345	162

Economic contributions of wildlife viewing were not reported at the county level. (Southwick Associates 2014)

The figures in Table x are not specific to big game, nor any specific species enjoyed in a specific location, nonetheless, they provide important context on the economic contributions from recreational hunting and wildlife viewing in general.

Bighorn sheep enthusiasts have funded the herd restoration efforts and conservation management through hunting licenses, tags and habitat stamps, as well as through purchasing hunting and wildlife viewing gear and supplies. Such funding are coordinated with CPW and used to continue to support management of bighorn sheep in Colorado.

Poaching of any animal, especially big game is an issue taken seriously by CPW and by hunters and wildlife enthusiasts alike. The CPW offers \$500 reward to those with information on cases involving big game or endangered species, and if a case is particularly flagrant, CPW may reward up to \$1,000. In 1998, a person was fined \$2,500 and sentenced to 4 months in jail for killing a bighorn sheep out of season in southern Colorado, and further ordered to pay \$17,500 in civil restitution to the State of Colorado and sentenced to an additional 4 month of home confinement by Federal Court.

Bighorn sheep have value to hunters who will wait years, applying to the drawing for an opportunity to spend the time and energy necessary to hopefully successful harvest a sheep. Bighorn also have value to the many people who enjoy watching them around the state. Especially to those who have put in their personal time, money and commitment, working to bring the herds back throughout their historic range.

## **Ranching Operation and the Sheep and Lamb Industry**

Although the previously described economic base analysis revealed that agribusiness is not a major driver in La Plata County, the sheep and lamb industry may be directly affected by agency action. Therefore, a brief overview of the U.S sheep and lamb industry is presented here, followed by several relevant statistics specific to Colorado and La Plata County.

The dominant feature of the sheep industry in the United States has been the steady decline in sheep and lamb production and consumption since the mid-1940s. Sheep inventories have shown a steady decline since peaking at 56.2 million head in 1942. During the 1960's, sheep numbers fell each year and were just over 21 million head at the end of the decade (USDA-NASS 2011). In 2012, total sheep and lamb inventory in the U.S. was 5.3 million head (USDA-NASS 2014). U.S. lamb consumption reflected similar trend.

On a retail equivalent basis, per capita lamb consumption in the U.S. fell from a high of about 6.6 pounds in 1945 to 3.0 pounds in 1951. Onward from the 1960s, U.S. per capita lamb consumption began a slow, steady decline to 1.4 pounds in the early 1980s; 1.3 pounds in the early 1990s; and about 1.1 pounds in the early 2000s (NRC 2008). Beginning in 2008, U.S. per capita lamb consumption fell from 1.0 pounds to 0.9 pounds in 2009 and 0.8 pounds in 2012 (USDA-ERS 2014). Preliminary forecast shows that consumption to remain around 0.7 pounds - 0.8 pounds per capita through year 2023 (USDA-ERS 2015).

Although per capita consumption has been on a downward trend, prices have climbed over the past two decades, hitting an all-time high in recent years. The average market price at San Angelo, Texas for Choice slaughter lambs hovered between \$60 to \$90/cwt (per hundred weight) during the late 80s and early 90s. Prices averaged around \$100/cwt before overshooting \$120/cwt after 2004 (USDA-NASS 2011).

In recent years, the industry has experienced fluctuations. Sheep and lamb prices climbed to unprecedented levels in 2011 (\$160/cwt at San Angelo), leading to record cash receipts for Colorado producers, a national production leader. Lamb appeared to have gained greater interest among chefs and locavores, with overall consumer demand increasing. (CU-LSB 2011) Encouraged and supported by strong prices, producers raised larger flocks of sheep and goats. This partly contributed to a difficult year in 2012 for sheep and lamb producers and feeders across Colorado. The sector struggled with high inventories and record heavy slaughter lamb and yearling weights caused by delayed sales early in the season. As price declined from \$160/ctw to \$113/ctw, fewer lambs were sold on the open market, which created an oversupply of lamb for slaughter, resulted in a large stockpile of old animals. Some consumers were quick to identify unfavorable changes in the taste profile of the older lamb being sold, further dampening demand. (CU-LSB 2012) The price of lambs remained low at \$111/ctw in 2013 before climbing back up to \$159/ctw in 2014, and it is forecasted to remain at the \$157-\$169/ctw range in 2015 (USDA-ERS 2015). Higher prices for red meat in general are helping to strengthen lamb prices, also, consumer demand for grass-fed lamb is on the rise and could potentially affect Colorado's lamb feeding operations (CU-LSB 2013 and 2014).

The 2012 USDA Census of Agriculture collected farm production expense information at the state-level. For a typical sheep and lamb operation in Colorado, the total annual farm production expense was \$90,250 in 2012. On average, the largest share of the total expense included;

- Feed purchased (36% of total),
  - Livestock and poultry purchased or leased (29%),
  - Hired farm labor (7%),
  - Interest expense (5%),
  - Gasoline, fuels, and oils purchased (4%),
  - Supplies, repairs, and maintenance costs (4%),
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All other production expenses (4%),  
Cash rent for land, buildings, and grazing fees (3%),  
Property taxes paid (3%),  
Utilities (2%),  
Custom work and custom hauling (1%),  
Fertilizer, lime, and soil conditioners purchased (1%),  
Contract labor / rent and lease expenses for machinery, equipment, and farm share of vehicles (0.8%),  
Chemicals purchased (0.4%),  
Seeds, plants, vines, and trees purchased (0.35%), and  
Production expenses paid by landlords (0.1%), (USDA-NASS 2014).

While the largest share of the total expense for a typical sheep and lamb operation in Colorado was feed purchases, a smaller, but related expense is grazing fees. The Census of Agriculture does not break out the cost of grazing fees from cash rent for land and buildings, so it is not known how much of that 3 percent cost originate from grazing fees (include both public and private rangeland). In the western states, the federal grazing fee for 2015 is \$1.69 per animal unit month (AUM) for public lands administered by the Bureau of Land Management (BLM) and \$1.69 per head month (HM) for lands managed by the Forest Service. The 2014 fee was \$1.35 per AUM or HM. An AUM or HM – treated as equivalent measures for fee purposes – is the use of public lands by one cow and her calf, one horse, or five sheep or goats for a month.

As for private land grazing, lease rates varied by region. In 2013, the average lease rate for privately owned, non-irrigated pasture in Colorado's southwest region was \$14.67/head-month (Tranel et al. 2013). Note that this rate is based on survey results and reflect only the average condition in the region, as feasibility of private grazing varies depending on factors such as proximity to ranch, or, the mere availability of private pasture in the area. The survey conducted by Tranel et al. (2013) also revealed other information about private grazing such as fencing construction and maintenance. About 27 percent of the respondents in Colorado's southwest region reported that the pasture landowner provided labor for fence maintenance; 4 percent of them stated that the costs were shared while 68 percent of them revealed that the tenants (livestock owner) themselves were responsible for fence maintenance labor. As for materials for fence maintenance, about half the respondents reported that materials were provided by the landowners, half by tenants, and a small percentage of respondents reported sharing the cost of materials.

Besides farm expenditure information, the 2012 USDA Census of Agriculture also collected net cash farm income data for sheep and goat farming operations. In Colorado, there were 224 sheep and goat farming operations reported positive annual cash income in 2012, with an average net gain of \$140,577; while a total of 988 operations reported negative annual cash income in 2012, with an average net loss of \$21,230 (USDA-NASS 2014). As discussed earlier in this section, livestock prices are volatile; therefore, it is important to note that annual cash flow also fluctuates for agribusinesses. As in other businesses, ranchers may operate at a loss for as long as cash reserves hold out, and, that the growth potential (again, as in any other businesses) depends on the entrepreneur. Entrepreneurships and motivation are important in the desire to maintain a traditional enterprise such as ranching. Ranchers are not often in the livestock business not just to

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make a profit, but because they value the quality of life that comes with the ranching lifestyle (Rowe, Bartlett & Swanson, 2001).

Gentner and Tanaka (2002) found that public land ranchers ranked lifestyle attributes above profit maximization. Family tradition, culture and values are some of the more important reasons for maintaining a ranching operation. In Gentner and Tanaka's survey, public land ranchers were asked a series of questions regarding possible strategies when faced with different scenarios, for example, the elimination of seasonal uses of federal grazing and reducing AUMs. For the 'sheep herder ranchers' group, when faced with the hypothetical prospect of elimination of federal grazing in the summer months, about 30 percent of the respondents stated that they would cut back on livestock production, pass down to next generation, reduce herd, or sell the ranch; a little less than 30 percent stated that they would intensify their use of private grazing land; 20 percent of the respondents were not sure what they would do in the face of this change; a little more than 10 percent of the respondents stated that they would continue their current level of operation; while less than 10 percent stated that they would diversify their operations either on-ranch or off-range<sup>3</sup>. Similar responses were given to the scenario of a 50 percent reduction in AUM for this group. Gentner and Tanaka (2002) concluded that public land ranchers are very heterogeneous in terms of their income sources as well as motivations to maintain a ranching operation (from ranch income dependent, to hobby operations, and somewhere in between). Therefore, the assumption that all ranchers operate under the same motivation (i.e. profit maximization) is unfounded.

## Ranch Viability and Land Use

As communities and urban areas grow, the price of neighboring agricultural land increases until it exceeds the income-producing potential the land can provide to farms and ranches. Not only does this happen at the edge of communities, it also happens in attractive settings at the edge of national forests. Base ranch properties of national forest grazing permittees have experienced development pressures in many growth areas across the West, especially near mountain resorts or other communities that offer a variety of amenities. Second-home development can be a significant source of demand for ranch properties in these areas. In addition to attractive land prices, ranchers may also face challenges in terms of operation costs and livestock prices, all subject to local and national markets (i.e. fluctuating prices and consumption demand as discussed in previous section). When costs rise or livestock prices fall – affecting the profitability ranch operations – high land prices make land sales an increasingly attractive source of income.

Gentner and Tanaka's survey presented some noteworthy questions faced by public land permittees, such as the seasonal elimination of federal grazing and reduction of AUM. While the majority of ranchers from Gentner and Tanaka's study revealed that they would not sell the ranch when faced with such scenarios; the concern of lands use change (through base ranch properties sales) due to financially non-viable operations is recognized. This issue is about

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<sup>3</sup> Examples of diversifying operation include pursuing more or better off-ranch employment, growing different crops for cash sale, offering ranch based recreation, or adding a new class of livestock.

indirect effects, and hinges on whether public land permittees continue operating under reduced or no grazing scenarios. As discussed earlier, individual permittee's financial situation, entrepreneurial capabilities, motivation, etc. are not generally homogeneous, so it is unsound to simply assume a particular chain of event (e.g. base property sales due to increased operational costs, etc.). Nevertheless, agricultural lands and projected land use changes in La Plata County are examined below.

A 2014 property assessment study reviewed county records to determine major land categories in La Plata County: irrigated farm, dry farm, meadow hay, grazing and other lands (Wildrose Appraisal 2014). Acreage and land value information are compiled by land classes. In La Plata County, of those lands classified as private agricultural uses, 65 percent belongs in the grazing land class (\$8/acre on average), 14 percent in the flood land class (\$128/acre), 11 percent in dry farm (\$30/acre), 5 percent in meadow hay (\$93/acre), 3 percent in the sprinkler land class (\$90/acre) and 1 percent in the forest land class (\$8/acre).

In support of the 2010 Renewable Resources Planning Act (RPA) Assessment, the U.S. Forest Service forecasted changes in land uses for the coterminous United States in response to three scenarios<sup>4</sup> (Wear 2011). Total acreages of nonfederal cropland, pasture, forest, range and urban lands are projected through 2060. Nonfederal urban and built-up land area growth varies by region, the Rockies is projected to gain about 11 million acres by 2060 (a 153% increase from the 2007 reference period). For La Plata County, there were a total of 26,000 acres (2.4% of total county area) of urban and built-up land area in 1997, and it's projected to gain an additional 40,000 acres (averaged from three IPCC-based scenarios) by 2060. In terms of proportion of total county land area, this is a 3.7 percent increase from the 2007 reference period. Naturally, those urban and built-up lands gains are accompanied by losses in other land classes such as cropland, pasture, forest and range cover types. La Plata County is projected to lose approximate 26,000 acres (2.4% of total area) of its nonfederal rangeland; and approximately 4,600 acres (0.4% of total area) of its nonfederal pastureland<sup>5</sup> through 2060. Other land cover losses include cropland and forestland: the county is projected to lose approximately 4,200 acres (0.4% of total) of its nonfederal forestland and 5,400 acres (0.5% of total) of its nonfederal croplands through 2060. (Wear 2011)

Although currently less than 3 percent of La Plata County's land area is in the urban/built-up class, and that grazing is the largest class of private agricultural lands (and of relatively low value on a per acre basis) according to the 2014 private property assessment described above;

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<sup>4</sup> The three RPA scenarios are linked to globally consistent and well-documented scenarios used in the Intergovernmental Panel on Climate Change (IPCC) 4<sup>th</sup> Assessment (AR4): The A1B, A2 and B2 scenarios. The A1B scenario assumed a mild range population growth and high per capita disposable personal income level through 2060; the A2 scenario assumed a high population growth and low per capita disposable personal income level through 2060; while the B2 scenario assumed low population growth and mid-level per capita disposable personal income.

<sup>5</sup> Rangeland in the RPA report is defined as land cover/use which the climax or potential plant cover is composed principally of native grasses, grass-like plants, forbs or shrubs suitable for grazing and browsing, and introduced forage species that are managed like rangeland. Conversely, pastureland is defined as land cover/use managed primarily for the production of introduced or native forage plants for livestock grazing

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nevertheless, pasture and rangeland still constitute the majority of land cover conversion projected to occur by 2060. In other words, if and when lands use changes occur in the county (gains in urban / built-up area); it is likely that those gains will come from the conversion of pasture and rangelands.

In discussing concerns regarding open spaces, it is important to distinguish between open spaces on public land versus private land. Private land open space may offer scenic, wetland, wildlife habitat, watershed condition, and related benefits. Pastoral landscapes on private lands are often highly valued in certain communities for their scenic and cultural importance. Generally, private land open space does not offer recreation use benefits to the public, although hunting privileges may be extended to certain parties. In addition, private land owners that have not sold developmental rights (e.g. conservation easements) retain the option for future land conversion.

### **La Plata County's Sheep and Lamb Industry and Regional Economic Contributions Analysis of Grazing on the Weminuche Landscape**

From the 1925 Agriculture Census, 97 farms in La Plata County reported a total of 20,571 head of sheep and lambs, with a total value of \$261,938 (over \$2 million in 2012 dollars). In 1945, 205 farms reported a total of 36,546 head of sheep and lambs, valued at \$351,204 (over \$3.5 million in 2012 dollars). After the peak of mid-1940s, sheep and lamb productions in La Plata County followed the national trend of steady decline (U.S. Department of Commerce 1927; 1946). By 2012, there were a total of 64 sheep and lamb operations in La Plata County (USDA-NASS 2014). Those operations have a total inventory of 5,483 sheep and lambs; out of which 4,521 head were sold for \$612,000 in 2012. USDA classifies sheep and lamb operation as any establishments primarily engaged in raising sheep, lambs, and goats, or feeding lambs for fattening. La Plata County's total sheep and lambs inventory ranked #10 among counties in Colorado; among counties nationwide, La Plata ranked #166 (USDA-NASS 2014b).

Ranching operations have economic linkages with other sectors of the economy besides livestock and agricultural sectors. In fact, changes in grazing activities on NFS lands have implications for the overall regional economies surrounding La Plata County. An economic contribution analysis is presented here, in order to estimate the GRP (which contribute to GDP), income, and the employments sustained/supported by AUMs permitted to graze on the Weminuche landscape. It is important to stress that this analysis does not attempt to calculate the economic impacts from all sheep and their ranchers; rather, this AUM-based analysis estimates only the share of employments, income, and GDP derived from permitted grazing on active Forest Service allotments on the Weminuche landscape. Ranchers use Forest Service forage for only a portion of their operations (i.e. summer months), therefore, Forest Service forage accounts for a fraction of the annual feed and forage requirements, which, in turns, only a portion of their operations' revenue and associated economic impacts can be reasonably attributed to NFS land and management. For this reason, the Forest Service relies upon an AUM-based approach for estimating those economic contributions derived from forage provided by authorized grazing on existing allotments on the Weminuche landscape.

For the six active allotments, annual average use was 1,800 AUM for sheep and 252 AUM for cattle (Canyon Creek only) during the past five years. Using this actual AUM usage information along with agency economic contribution model, the regional economic effects in terms of

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employment, income and GRP are estimated. On an annual average basis, permittee grazing on these allotments contribute approximately \$580,000 to GRP, \$300,000 in labor income (2014 USD), as well as support/sustain about 11 full and part time jobs in the regional economy. These results reflect indirect and induced economic effects – private sector activities stimulated by Forest Service grazing entering the region’s economy – in addition to direct employment and income effects.

An Input-Output (I-O) model was used to estimate a set of contribution ratios for this analysis. The specific methodology is based on a set of AUM-based coefficients the BLM developed. This method is unique in its incorporation of unpaid/family labor into the calculation – whereas most traditional I-O studies rely on datasets without unpaid labor. In agricultural operations, family members often provide significant amounts of labor. Excluding unpaid/family labor may lead to an underestimation of the direct employment effect. In areas where unpaid/family labor constitutes a large share of the total labor on ranches and farms, this analytical approach paints a more complete picture. The process for calculating these contribution ratios are documented by the BLM (Larson 2012). The Forest Service updated the coefficient specific to Colorado by extracting information pertaining to the ranching industry for the State of Colorado from the 2012 Census of Agriculture, the American Community Survey, as well as from the 2012 IMPLAN® data and software system. To calculate the indirect and induced effects, farm production expenses information as reported by the Census of Agriculture are used as input to the IMPLAN® model.

It is important to note that this analysis employs IMPLAN® to estimate the indirect portion of the employment effects; therefore, the reported job figure here is expressed in terms of ‘annual average’ of both full and part time total wage and salary employees, as well as self-employed jobs. This method of measuring employment is a standard convention and consistent with methods used by the U.S. Bureau of Labor Statistics. One cannot discern the number of hours worked or the proportion that is full time vs. part time. It is also important reiterate that the employment contributions calculated are reported simply as jobs, not full time equivalents (FTEs). The impacts include both full time and part time employment, so a person with more than one job could show up more than once in the data. This prohibits comparisons to population data and inferences about the effect on unemployment rates.

Labor income includes all forms of employment income: in addition to wages, it also includes benefits and proprietor income. The value-added (GDP) contributions consist of;

- (1) employee compensation –wages and salaries plus benefits paid by local industries;
- (2) proprietor income – income from self-employment;
- (3) other property income – corporate income, rental income, interest and corporate transfer payments; and
- (4) indirect business taxes – sales, excise, fees, licenses and other taxes paid, including non-income based payments to the government.

Gross Domestic Product (or value-added in IMPLAN) is a popular and widely used metric that measures economic activities and outputs, taking into account the incremental value added to a product or service at each step of the production process. It is also critical to note that IMPLAN

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is a static model representing a snapshot in time. The state-level IMPLAN model used (Colorado) in this analysis is for the year 2012. It reflects only the structure and state of the economy in 2012. Moreover, IMPLAN is used to examine “marginal” changes; results are valid only for relatively small changes to the regional economy. In other words, the results hold with the assumption that there is no substantial resource management action in the region large enough to change the underlying structure and trade relationships of the local economies.

## Financial Efficiency Analysis

It is agency policy that financial efficiency analysis be conducted from the perspective of the Forest Service (FSM 1971). The Forest Service generally conducts financial efficiency analysis over the initial life of the management decision, a period of ten years in this case. The main criterion in assessing the financial efficiency is Present Net Value (PNV). Present Net Value is the current value of future benefits and costs over the life of the project discounted at the agency-established rate of 4 percent (FSM 1971.3). Table 4 displays the PNV for each alternative. Details on the calculations of present value (PV) are found in the project record.

### Cost Efficiency

Cost efficiency is an approach that uses the monetary expression of some identifiable benefits and costs, while recognizing that other benefits and costs are best expressed in other terms. Costs expressed in dollar terms here include labor and materials. Benefits expressed in dollar terms here include grazing fees. Other costs and benefits, such as watershed and riparian health or scenic quality, have not been assigned dollar values; therefore, they are expressed using other qualitative terms elsewhere in this EIS and project record. Furthermore, other social and economic effects (operation costs, regional economic impacts, etc.) specific to permittees in general are discussed above.

**Table 4: Efficiency Analysis (Present Net Value in 2014 dollars)**

<b>Forest Service</b>	<b>Alt 1</b>	<b>Alt 2</b>	<b>Alt 3</b>	<b>Alt 4</b>
PV Costs	\$0	\$69,279	\$69,279	\$152,827
PV Revenue	\$0	\$30,117	\$30,117	\$30,117
<b>PNV</b>	<b>\$0</b>	<b>-\$39,163</b>	<b>-\$39,163</b>	<b>-\$122,711</b>

It is important to remember that PNV is used as an indicator of financial efficiency and presents only one approach to be used in conjunction with many other non-monetized factors in the decision-making process. A positive PNV indicates that the alternative is financially efficient. Many of the costs and benefits associated with this decision are not quantifiable. These costs and benefits are described qualitatively, in the individual resource sections of this EIS. Management of NFS lands is expected to yield positive net benefits for the American public – including the consideration of all benefits and costs. These management actions, however, may or may not yield financial net revenues. Descriptions of the differences in PNV between alternatives are explained in the Effects Analysis section below.

## Environmental Consequences

### Similar to All Alternatives

In La Plata County, there is both a tribal population and a Hispanic/Latino population that are potentially of interest to land managers. Tribes are engaged with government to government consultation for projects to ensure tribal issues and concerns are addressed throughout the planning processes. With tribal consultation continuing throughout the project, no disproportionately adverse and negative impacts are expected under any of the alternatives to the tribes. Outreach and public meetings were held to be inclusive of Hispanic/Latino communities and with no specific issues raised from these communities; it is assumed no disproportionate adverse and negative impacts are expected under any of the alternatives.

### Alternative 1 – No Grazing

Public lands contribute to the competitive advantage of the livestock industry, because in some places the contribution is a low-cost alternative to private grazing lands; while in other places, the contribution is the opportunity for summer range where limited or no private grazing exists. The No Action Alternative would reduce public land available for livestock grazing by roughly 162,500 acres. This acreage includes NFS lands from all the allotments in the landscape. This alternative would be the least preferred by those stakeholders interested in maintaining NFS for grazing use and those currently utilizing the project area under a grazing permit.

For the permittees, this alternative effectively eliminates summer forage opportunity (June till early October is generally the permitted season of use on the Weminuche landscape). While this alternative does not directly dictate permittees' ranching operation during the rest of the year when livestock are off NFS land, it would, however, create burdens in terms of operating costs, and could be potentially detrimental for operations nearing, or already financially non-viable and are economically dependent on federal grazing. This is important since summer and early fall are important months for growth of livestock, in preparation of market lamb, slaughter lambs, or feedlot sales for further fattening. As discussed in the Affected Environment, for the average sheep and lamb operation in Colorado, the largest share of the total expense was feed purchase (36% of total). Note that even for public lands ranchers, some of this cost is incurred during the eight or nine months while livestock are off NFS lands – excluding time grazed on owned base property or other private pastures, if available. Eliminating grazing on the Weminuche landscape obliges permittees to obtain alternative summer forage (private pasture, other state and federal lands, if available and feasible), or, more likely, incur the costs of additional feed purchases. In any case, the elimination of federal grazing substantially increases a permittee's operation costs.

These costs on the permittees may not be offset by revenues from marketable gains of livestock, making the ranching business financially non-viable. This analysis alone cannot predict that the permittee would cease livestock operations or put the base property up for sale. Typically, many factors contribute to such a decision. As in other businesses, ranchers may operate at a loss for as long as cash reserves hold out, and, that the growth potential (again, as in any other businesses) depends a great deal on the entrepreneur. Besides entrepreneurship, motivation plays an

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important role for the desire to maintain a traditional enterprise such as ranching. Continuing operation, diversification, seeking off-ranch employments, or ceasing operations are some of the responses public lands ranchers have considered when faced with the prospect of reduced/eliminations of federal grazing. Detailed discussions and related research findings are found in the Affected Environment section. In terms of regional economic impacts, if off-ranch employment becomes the chosen route – either full-time or as supplemental income for sustaining a financially non-viable ranch – some additional direct and indirect effects (employment, income, contribution to GRP, etc.) will continue to occur in the local economy. On the other hand, if current permittees cease to operate and no further action is taken, those indirect economic contributions to the local economy as described in the Affected Environment section will not be sustained. This is in addition to the losses in direct income, employment, way of life and values associated with maintaining a traditional enterprise such as ranching. It is important to note that the issue of ranch viability (and subsequent land use changes, etc.) hinges on the concept of indirect changes. These effects are not the sole result of Forest Service range management decisions. However, Forest Service management becomes a key contributor if financial viability of the existing operation is doubtful.

Concerns regarding lands use changes (through base ranch properties sales) due to financially non-viable operations is also recognized. This issue is about indirect effects, and hinges on whether public land permittees continue operating under this no grazing scenario. As discussed earlier, individual permittee's financial situation, entrepreneurial capabilities, motivation, etc. are not homogeneous; therefore it is unsound to simply assume a particular chain of events (i.e. elimination of seasonal grazing opportunity leads to base property sale, etc.). Nonetheless, this important concern is examined here. Should the permittee find that livestock operations ranch-wide are no longer sustainable in the long-run, sale of the base property – or a sub-divided section of it – could occur. Should this happen, land use may or may not change. It should be noted that if ranch base property sale is considered, some buyers may keep lands in agricultural use, regardless of profitability (e.g. hobby, non-profit agricultural operations, creation of conservation easement by environmental groups, etc.) and maintain the lands as private open space for their scenic, habitat, and other environmental values. On the other hand, other buyers may convert land to developed uses such as residential and possibly commercial. Changes in land use from agriculture to either residential or commercial use decreases private open space. Given the large share of land that are considered open space in the county (see previous section on statistics from the RPA study), such a change would generally be inconsequential in the broader landscape. Finally, the discussion thus far is restricted to the mere calculation of acreages of different land cover types; it is important to remember that reductions in open space could affect current benefits to the local community such as pastoral landscapes, wetlands, wildlife habitat, and watershed condition. See other sections in this EIS for a more detailed analysis of those effects.

Recreation and wildlife (specifically bighorn sheep) impacts are some of the important aspects of this environmental analysis. There are concerns that the presence of domestic sheep affects the quality of individual's recreation experience within the project area (these specific impacts and concerns are outlined in the recreation section of this EIS). There are also concerns that physical contact between bighorn sheep and domestic sheep results in an *increased risk* of disease transmission potential to bighorn sheep, with *increased potential* for a subsequent bighorn

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mortality event. Such social and economic impacts could potentially affect the economic activities deriving from recreation (including bighorn sheep viewing and hunting), the associated regional economic contributions to the local economy as discussed previously, as well as continued disruption to recreational users sense of place in the area. Since this alternative eliminates domestic sheep grazing, these concerns would no longer be relevant. This alternative would be the preferred alternative by those most concerned about maintaining bighorn herds for hunting and wildlife viewing opportunities, and those concerned about eliminating grazing conflicts in the project area.

Alternative 1 has a present net value of zero (table 4), since the agency would receive no revenue from grazing fees, and incur no permit administration cost on the strict basis of AUM permitted on the Weminuche landscape.

## **Alternative 2 – Current Management**

Continuation of the current situation would not create any further costs to operations grazing on NFS lands. Outside forces, such as interest rates, fuel prices, or market conditions could change the margin of profit for any operation regardless of AUM's grazed on federal lands, but there would likely be no change from the current economic situation due to Forest Service action. All else equal, the regional economic contributions deriving from livestock grazing as presented in the affected environment section<sup>6</sup> would likely be sustained, given current AUM usage. This alternative would be the most preferred by those stakeholders interested in maintaining NFS for grazing use and those currently utilizing the project area under a grazing permit.

Under this alternative, there are 44,457 acres of overlaps (acres open to grazing in bighorn core range) in active or vacant allotments. There are concerns that physical contact between bighorn sheep and domestic sheep results in an *increased risk* of disease transmission potential to bighorn sheep, with *increased potential* for a subsequent bighorn mortality event. Such social and economic impacts could potentially affect the economic activities deriving from recreation (including bighorn sheep viewing and hunting), the associated regional economic contributions to the local economy as discussed previously, as well as continued disruption to recreational users sense of place in the area. The potential future risk to bighorn sheep herds being lost to disease would continue to be of concern to those who have invested in the reintroduction and conservation of herds. Market conditions for sheep and lamb and other factors such as substitution would ultimately determine whether these potential effects actually materialize.

Since this alternative would continue domestic sheep grazing, this alternative would be the least preferred alternative by those concerned about maintaining bighorn herds for hunting and wildlife viewing opportunities, and those concerned about eliminating grazing conflicts with recreational use in the project area.

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<sup>6</sup> Economic contribution of approximately \$580,000 to GRP, \$300,000 in labor income (2014 USD), as well as support / sustain about 11 full and part time jobs in the regional economy.

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As shown in table 4, the present net value of alternative 2 would be -\$39,163. Although alternative 2 would bring in grazing fees revenue, the costs of permit administrative as well as cattle improvement costs (shared with permittee) required for the Canyon Creek allotment would not be completely offset by the grazing fees revenue. It simply implies that agency income from grazing permit fees does not fully offset its costs of improvement, annual maintenance and permit administration (i.e. inspections). Grazing fees are set based on a formula established by Congress. The formula is not subject to change by the Forest Service.

### **Alternative 3 – Adaptive Management w/Forage Reserves**

Alternative 3 requires allotments be managed more actively than Alternative 2 due to new design criteria. Because of the flexible nature of adaptive management, it is difficult to predict the impact to ranching operations. Some operators may be effective in monitoring and adjusting to adaptive management options, while others may be unable to adapt to the new conditions. As with Alternative 2, outside forces play a large role in the ability for ranchers to maintain an operation's profitability. This alternative may be preferred by some stakeholders interested in maintaining NFS for grazing use and for some currently utilizing the project area under a grazing permit that are able to effectively implement adaptive management measures.

Some ranches may not be able to adapt to the new management practices and/or profit margins could become too small to remain in business. Some ranching operations could possibly fail. See Alternative 1 for detailed discussion regarding factors affecting such business decisions. If permittees are able to adapt to the increased costs of grazing implementation and improvements, all else equal, the regional economic contributions deriving from livestock grazing under Alternative 2 would likely be sustained, given current AUM usage.

Under this alternative, there are no overlaps (acres open to grazing in bighorn core range) in active or vacant allotments. Given successful implementation of design criteria under this alternative, concerns regarding potential negative effects on economic activities deriving from recreation bighorn sheep viewing and hunting and associated regional economic contributions to the local economy are likely reduced. The potential future risk to bighorn sheep herds being lost to disease may continue to be of concern within the S71 herd.

This alternative would continue domestic sheep grazing within areas with recreational users mostly outside of Wilderness, still creating conflict for those users with the sheep activities. This alternative would be a more preferred alternative than alternative 2 by those concerned about maintaining bighorn herds for hunting and wildlife viewing opportunities, and by those concerned about eliminating grazing conflicts with recreational use in the project area, especially within the Wilderness.

As shown in table 4, the present net value of alternative 3 would be -\$39,163. Although alternative 3 would bring in grazing fees revenue, the costs of permit administrative as well as cattle range improvement costs (shared with permittee) required for the Canyon Creek allotment would not be completely offset by the grazing fees revenue. Therefore, the present net value of alternative 3 is negative.

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## **Alternative 4 – Proposed Action - Adaptive Management w/Closing Vacant Allotments**

All effects and discussions for Alternative 3 would apply here, except that all vacant allotments would be closed instead of designating some of them as forage reserves. While those allotments have been vacant for over 3-4 decades, the closures would technically provide less flexibility for grazing permittees because options for grazing livestock in emergency situations would be lost. Because of this loss of flexibility, this alternative is not preferred by those stakeholders interested in maintaining NFS for grazing use and those currently utilizing the project area under a grazing permit.

Under this alternative, there are no overlaps (acres open to grazing in bighorn core range) in active or vacant allotments and vacant allotments would be closed. Given successful implementation of design criteria under this alternative, concerns regarding potential negative effects on economic activities deriving from recreation bighorn sheep viewing and hunting and associated regional economic contributions to the local economy are likely reduced over the long term. The potential future risk to bighorn sheep herds being lost to disease may continue to be of concern within the S71 herd.

This alternative would continue domestic sheep grazing within areas with recreational users mostly outside of Wilderness, still creating conflict for those users with the sheep activities. This alternative would be a more preferred alternative than alternatives 2 or 3 by those concerned about maintaining bighorn herds for hunting and wildlife viewing opportunities, and by those concerned about eliminating grazing conflicts with recreational use in the project area, especially within the Wilderness.

In the financial efficiency analysis (table 4), the Agency revenue flow under Alternative 4 is the same as Alternatives 2 and 3, assuming similar AUM usage. Additional cattle range improvement costs incurred by the Forest Service under this alternative includes its share of costs to installing fences, construct new spring developments and stock ponds, reconstruct nonfunctional spring developments and stock ponds, and other related material costs for all allotment (except Virginia Gulch). The negative PNV (-\$122,711) simply implies that agency income from grazing permit fees does not fully offset its costs of cattle range improvements, annual maintenance and permit administration (i.e. inspections). Many of the costs and benefits associated with this Alternative are not quantifiable or accurately portrayed. These costs and benefits are described qualitatively, in the individual resource sections of this EIS. Management of National Forest lands is expected to yield positive net benefits for the American public – including the consideration of all other non-market benefits and costs. These management actions, however, may or may not yield financial net revenues.

## **CUMULATIVE IMPACTS**

Following the national trend, the dominant feature of the sheep industry in the area has been the steady decline in sheep production since the height of mid-1940s. Today, the agribusiness sector is not a major economic driver in La Plata County, sheep and lamb operations in the county –

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about 60 of them according to the latest Agriculture Census – will likely continue to contribute to the regional economy given market conditions. Preliminary forecast shows per capita lamb consumption in the U.S. to remain low (around 0.7 lbs. - 0.8 lbs. per capita) through year 2023.

The difficult nature of agribusiness and fluctuating market conditions are the norm and faced by permittees under any alternatives. However, under Alternatives 1, it is possible that the reduction in available forage (through the elimination of grazing on the landscape) would increase private grazing fees in the surrounding area, due to increased demand from ranchers seeking to replace lost forage. If and when this occurs, this alternative creates additional and lasting burden to the ranching community. It should also be noted that as with any other sectors, but especially in agribusiness, some operators will be profitable while many are not<sup>7</sup>.

Although currently less than 3 percent of La Plata County's land area is in the urban/built-up class, and that grazing is the largest class of private agricultural lands (and of relatively low value on a per acre basis); however, from the RPA land conversion study described previously, development pressure for ranch base properties is not non-existent. Furthermore, as described previously, pasture and rangeland will constitute the majority of land cover conversion projected to occur by 2060. Private open space is generally abundant in La Plata County. Should the land use of the permittee's base property change to either residential or commercial use, it will affect the immediate community; however, it would not materially affect local trends in open space.

Based on the information presented above, implementation of any alternative analyzed in this EIS would not result in substantial cumulative impacts to economic resources.

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<sup>7</sup> In Colorado, there were 224 sheep and goat farming operations reported positive annual cash income in 2012, with an average net gain of \$140,577; while a total of 988 operations reported negative annual cash income in 2012, with an average net loss of \$21,230 (USDA-NASS 2014).

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