Livestock Grazing On The National Forests – Why continue to do it?

By David Bradford, Floyd Reed, Robbie Baird LeValley, Calvin Campbell and Steve Kossler

Grazing on the National Forests and Public Lands continues to be contentious. It is the subject of vigorous debate and even lawsuits. A number of groups, including the Sierra Club, have increased their opposition to public land grazing, calling for its outright abolishment. To date this has not happened. Why? Why do the Forest Service, the BLM and other public land agencies continue to allow grazing on the national forests and public lands?

To begin to answer that, we need to go back to why the National Forests were established and why grazing was allowed on these lands. The original forest reserves were established in 1891 by presidential order to protect the forests of the mountain ranges of the West from fire and reckless cutting. These original forest reserves were exactly that —reservations where human activity was prohibited. No timber cutting, no livestock grazing, in fact, no trespassing was allowed.

These reservations created considerable controversy, as many western settlers believed they were being locked-out of valuable lands. In 1897 the Congress specified the purposes for which the forest reserves were established and provided for their protection and administration. In 1905 the forest reserves were transferred from the Department of Interior to the Department of Agriculture. The reserves were renamed national forests and placed under the administration of the newly established Forest Service. The management of the national forests continued to be contentious.

In 1907 the *Forest Service issued a publication, The Use of the National Forests*. This book became known as *The Use Book*. It was intended to explain to the public what the national forests were, what they were for and how they were to be used. It was recognized that the national forests were for use of the people of the West as well as for the whole country. The development and use of the forests would provide growth and prosperity. The range resources of the national forests were recognized as important and should be used. The emphasis was on commonsense management that allowed benefits for the present and sustained the resources for the future .

We should note that the issue of livestock grazing on the national forests was controversial from the very beginning. John Muir, founder of the Sierra Club, opposed livestock grazing and Gifford Pinchot, first Chief of the Forest Service, supported it. This disagreement was the basis of a lifelong rift between the two men.

Has the purpose of the national forests changed? We

Demographics For The North Fork of the Gunnison River Valley

The North Fork of the Gunnison River Valley (North Fork Valley) lies in Western Colorado. Most of the valley is located in Delta County with the upper drainage being located in Gunnison County and a southern branch located in Montrose County. The economy of the valley is based on coal mining, fruit orchards and ranching. The valley is rural and sparsely populated. The county is composed of 740,480 acres and there is a total population of 27,800 people (a population density of one person for every 26 acres). However, like most of Colorado and much of the western United States, even this small western Colorado county experienced a significant increase in population and development in the 1990's—growing from 20,980 people in 1990 to 27,800 people in 2000 (a 33% increase over this 10 year period).

The climate and topography of Delta County and specifically the North Fork Valley is typical of western Colorado. The land can be described as dry valleys surrounded by higher and wetter mountains. Precipitation varies from 8 inches per year in the valley bottoms to over 40 inches per year in the highest mountains. The fields of corn and grains, orchards, and pastures that make the valley lands green in the summer are all based on using irrigation water from the adjacent mountains.

Most ranches in the North Fork Valley are small to moderate in size. Like several other areas in Western Colorado the North Fork Valley developed a large fruit growing industry in the late 1800's-early 1900's. The development of the fruit growing industry caused much of the valley land to be broken up into small parcels that were practicable for fruit growing at the time. Many areas that were once in fruit have been converted to irrigated pastures as the high cost of production and low returns on fruit have made fruit growing less viable. As a consequence much of the valley bottom land is broken up into 40 to 100 acre blocks of irrigated lands.

do not believe it has. The Forest Service continues to emphasize that livestock grazing is a legitimate use of national forest rangelands. That commitment is identified in the Forest Service manual. The objectives of the range management program for the National Forests and National Grasslands are:

1. To manage range vegetation to protect basic soil and water resources, provide for ecological diversity, improve or maintain environmental quality, and meet public needs for interrelated resources uses.
2. To integrate management of range vegetation with other resource programs to achieve multiple use objectives contained in Forest land and resource management plans.
3. To provide for livestock forage, wildlife food and habitat, outdoor recreation, and other resource values dependent on range vegetation.
4. **To contribute to the economic and social well being of people by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood.**
5. To provide expertise on range ecology, botany, and management of grazing animals.

Can livestock grazing on public lands produce any benefits? If so, what are they?

We plan to discuss the various ways that the ranches in the North Fork of the Gunnison River Valley in western Colorado (the North Fork) that hold grazing permits on the adjacent Gunnison National Forest are interconnected. We hope to show how this relationship is producing ecological, economic and social benefits to the people of the communities of the West, as well as the rest of the United States.

Dyer allotment was grazed season-long by 1048 cow/calf pairs from May 15 to October 15, 1948. Note 2-foot deep, raw gully, bare ground and lack of vegetative cover. Shrubs are primarily snowberry. Precipitation for the year was "average." Photo by A. Cramer October 15, 1948. Photo courtesy of Denver Public Library.

Dyer allotment now managed under a deferred/rest rotation system—this area was rested in 2001. Precipitation for the year was 88% of average. Photo by David Bradford, October 12, 2000.

Ecological Benefits

Biological—Plants evolved with the ability to withstand a variety of environmental conditions. Nature is often not a well-tended garden. Most plants and animals are faced with conditions that are often not conducive to their individual survival. Fire, drought, floods, landslides, wind-storms, tornados, grazing, insects and disease are all environmental disturbances that affect plants. Plants developed physiological mechanisms that allow them to survive,

Cattle grazing in High Park on West Terror allotment. Photo by David Bradford.

and sometimes even thrive when impacted by these disturbances.

Grazing is actually one of the more benign environmental disturbances that plants encounter in nature. However grazing by herbivores can severely impact plants. Plants that are grazed too often can be reduced in vigor or even killed. Grazing by domestic livestock needs to be based on plant physiological needs in order for the plant to sustain itself.

Grazing strategies for domestic livestock have developed to the point that they not only will maintain plant health but also can actually be used as vegetation treatments. The grazing of goats on noxious weeds, such as leafy spurge, is a fairly common grazing treatment used in many areas. But grazing can also be used for other types of vegetation treatments.

For example, on the Grand Mesa, Uncompahgre and Gunnison National Forests (GMUG NF) cattle have been used to treat areas where native plants, such as mulesear, have increased beyond the range of natural variability. This treatment involves grazing the area with a large number of cattle for a short period of time. As another example, sheep are commonly used to graze tall larkspur to reduce the potential of poisoning cattle that follow the sheep. Neither of these treatments will completely eliminate these native plants but will reduce their density to levels that are considered to be more normal.

Grazing is also being used to treat deer and elk winter range. There are shrub-lands on the Forest that have become overly mature, or overly dense or stagnant. These areas are grazed by a large number of cattle for a short period of time. This treatment will open up the shrub canopy, creating a more open stand, and providing more palatable under-story vegetation. These treatments are also used where prescribed burning is not feasible or undesirable. Obviously, it is also a less severe treatment than spraying with herbicides.

Grazing is a natural process. It can be managed to maintain plant health and even used as a land treatment to provide a more desirable plant community.

Undeveloped open space— Ranches that hold grazing permits on national forests are composed of a combination of private and public lands. In general the private lands are located in the lower elevations on prime agricultural lands. Ranches that hold grazing permits on the GMUG NF **are required to own** a certain amount of private or base property. This requirement states that a permit holder must own sufficient base property to sustain their

Range ride with Leroux Creek grazing pool permittees to discuss range conditions, grazing plans and range improvements. West Elk mountains in background. Photo by David Bradford.

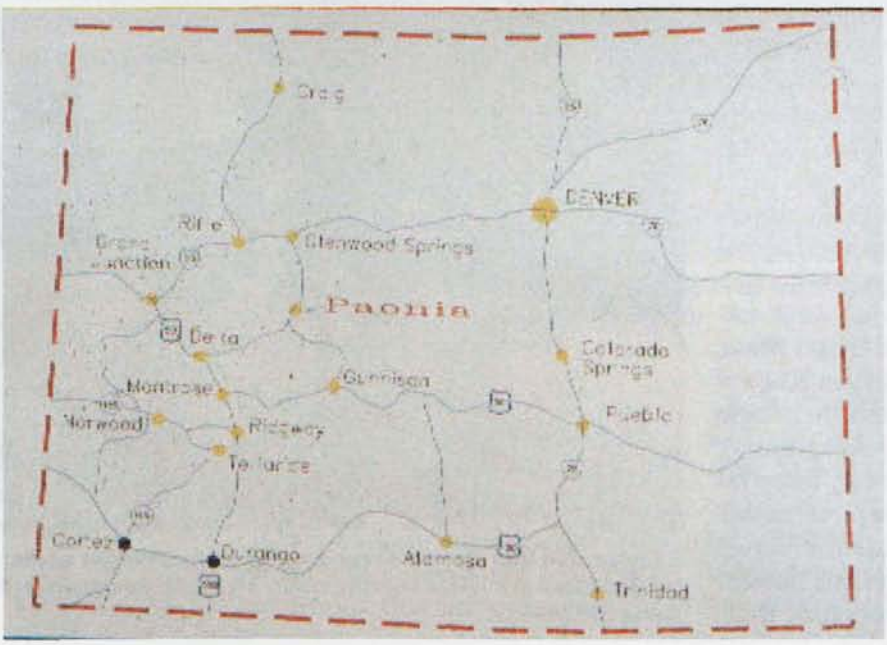
permitted numbers of livestock for a period of time equal to the time they graze the national forest or half the time they are off the national forest. This requirement goes back to the early days of grazing on the national forests. It was developed to assure that local, legitimate livestock operations would be given preference for grazing their livestock on the adjacent national forests.

Transient or speculative grazing operations were given a lower priority for issuance of grazing permits. As a consequence of the base property requirement all grazing permit holders on the GMUG NF own a certain amount of land used in their overall ranching operations.

In the North Fork Valley there are 47 ranches that hold national forest grazing permits. The amount of private land that each ranch owns ranges from 30 to 11,000 acres. There is a total of over 50,000 acres of private land or base property tied to these 47 ranches. In addition to this deeded land, these ranches lease an additional 36,000 acres of private land for grazing. The 50,000 acres of deeded land plus the 36,000 acres of leased land provides over 86,000 acres of ranch land in Delta County. These 86,000 acres are providing undeveloped open space in Delta County. Looking at it on a per ranch basis—each ranch holding a grazing permit on the Paonia Ranger District of the GMUG NF is providing an average of 1,830 acres of undeveloped open space.

How do these ranch lands fit with the overall land ownership pattern in Delta County? The 86,000 acres represents about **11% of the total area** of the county and **25% of the total private land** in the county, see Table 1 Delta County Land Ownership. Counting only the lands the ranches hold fee title to this is **7% of all land** in the county and **15% of the private** land in the entire county. This represents a significant number as the North Fork Valley represents approximately 40% of Delta County. In summary, approximately **50% of the private land** in the North Fork Valley is owned by ranches that hold grazing permits on the adjacent Gunnison National Forest. This represents a significant amount of land in the valley.

Similar studies show similar results. The ranches along the eastern side of the Uncompahgre Plateau in western Delta County comprise over 34,000 acres of private ranch land . This represents an additional **10% of all the private land** in Delta County. The other large agricultural area in Delta County is Surface Creek, near Cedaredge. This area also has a significant number of ranches with National Forest grazing permits.



It is important to note that the use of the National Forest for summer range allows North Fork ranchers to manage their home ranch primarily as irrigated hay meadows. Looking at the contribution of a National Forest Service grazing permit strictly on a calendar basis, public land ranches use their Forest Service grazing permit for 1/4 to 1/3 of their total forage base. However this is somewhat misleading. By maintaining their irrigated pastures ranchers are able to produce up to 45% of their total forage needs for the year. In effect by grazing their livestock on the National Forest ranchers are able to manage their land for maximum forage production during the peak growing season. As a consequence these parcels of land in the mountain valleys are maintained as large blocks of green, undeveloped open space.

Table 1 -- Delta County Land Ownership

Ownership	Acreage	Percent
BLM	209,946	28%
National Forest	189,378	26%
Total Private	341,156	46%
Breakdown of Private Land:		
Agricultural	284,570	38%
Irrigated	74,000	10%
Non-irrigated	210,570	28%
Other	31,069	4.2%
Municipal	15,312	2%
Roads	10,205	1.4%
Total	**740,480**	**100%**

Scale—As noted in the discussion above the greatest amount of private

land in the county is agricultural land. The farms and ranches in Delta County provide the largest, least fragmented, undeveloped blocks of private land in the county. In addition some ranches are located directly adjacent to the public land where they hold grazing permits, while some are located at a distance from them. In either case, these areas provide the greatest opportunities for managing large blocks of undeveloped land for wildlife habitat and biological diversity in the lower valleys in the county.

When farms and ranches are sold-off or subdivided this often results in smaller land units. This results in fragmentation of habitat. These smaller land units cause a decrease in opportunities to manage for large-scale wildlife habitat and biological diversity in the lower elevations in the county. Development along the Front Range of the Colorado Rockies is causing the loss of habitat for the black-tailed prairie dog and the Prebbles meadow jumping mouse. The population of Delta County increased 33% from 1990 to the year 2000. This represents a significant increase in 10 years. It is likely that increased development on the Western Slope and the loss of additional ranches will result in the loss of habitat for wildlife species such as the Gunnison sage grouse and the Gunnison and white tailed prairie dogs. The continued operation of ranches in the western valleys provides the greatest opportunity to maintain large blocks of undeveloped valley land.

Habitat—An additional consideration is that private agricultural interests own much of the valley bottom-lands and associated riparian habitats. If these lands are sold or subdivided these limited valley bottom riparian habitats will be negatively affected or lost. The ranches and farms that hold these lands either need to be maintained or the lands need to be preserved though public acquisition. Development of these lands will result in the loss of these very limited habitats. There are many benefits to maintaining these habitats. Obviously maintaining the existing agricultural operations provides the most economical means of maintaining these large-scale blocks of land.

Hidden Valley Sub-division above Paonia, Colorado. Developed since 1995. Mt. Lamborn of West Elk Mountains in background. Photo by David Bradford.

Economic Benefits

Agriculture has been the traditional mainstay of the economy of Delta County. Along with mining, it is the economic activity that has most influenced the character of the towns and the landscape. Agriculture and mining created the infra-structure and the society of Delta County. While agricultural earnings have declined, it remains a significant part of the Delta County economy. Currently the economy of Delta County is based on agriculture, construction, manufacturing/timber, tourism and various service activities, such as retail sales, transportation, communications, utilities, real estate, finance, insurance, education and health services. Agriculture produces nearly 12% of all the earnings in the county and over 16% of all employment in the county .

In addition there are a number of additional economic factors relating to public land ranches. One factor is the effect of development on the county tax base. A number of studies have been completed to measure the impacts of different land uses on a county's tax base. A 1998 study of Custer County, Colorado by the San Isabel Foundation, Custer Heritage Committee, Sonoran Institute and the American Farmland Trust, showed that:

1. Agricultural land and open space provide more in tax revenue to the county than they demand in service costs—$0.54 in services for every $1.00 in tax revenue.
2. Commercial and industrial land put more in county coffers than they take out in services—$0.71 in services for every $1.00 in tax revenue.
3. Residential land, incur higher service costs than it provides in revenue—$1.16 in service costs for every $1.00 in tax revenue.

There are economic benefits to

maintaining agriculture in Delta County as well as economic costs of losing agricultural lands to development. We believe it can be argued that there is an economical value to maintaining agriculture as part of our county economic base.

Social Benefits

Agriculture has provided long-term benefits to the North Fork Valley (as well as many other areas). Agriculture has been a significant economic activity in the North Fork Valley since the valley was settled in 1881/82. It has proven to be sustainable. Many of the ranches in the North Fork Valley have existed for a long time, with some being recognized as "Century Ranches".

As noted previously, irrigation-based agriculture had created the "green" landscape that characterizes the North Fork Valley, as well as most of the other valleys in western Colorado and the West. It is, in fact, this rural, green, agricultural landscape that appeals to many and attracts them to settle in these western valleys. At the same time while agriculture provides a greener landscape, some forms of agriculture have a greater impact on the land than others. Fruit orchards and row-crops, while providing important and desirable products, alter the native vegetation of the land in a significant manner.

However, the mix of agricultural products/types has provided a diverse combination that often compliment one another. Livestock are often grazed on row crop aftermath, such as corn stalks, sugar beets and onions. Livestock ranching provides the lowest impact form of agriculture, with the land being maintained in generally continuous cover and often in its natural state. As with much of our human activities, there are trade-offs. Some negative effect is often caused in the production of a positive one.

North Fork Valley Ranch Operations...Through The Seasons

Forest Service grazing permits in the North Fork Valley are used in the summer to early fall. Average turn-on for cattle allotments is June 16, with turn-off dates averaging October 15. Sheep allotments are generally grazed July 1 to September 15.

Calving generally occurs from late January to early March; lambing occurs from March to April. Both calving and lambing take place on the home ranch. As calves and lambs mature, the livestock are moved to early spring pasture that is either owned or leased. If the ranch holds a BLM grazing permit or lease, livestock are moved to BLM lands for spring grazing. Livestock are moved to the National Forest for summer grazing.

Livestock are moved off the Forest in the fall. Calves are weaned and shipped to feedlots or some are kept and finished on the home place before being shipped to market. Lambs are shipped to feedlots when they are weaned, right as they are moved off the Forest. Cattle are then generally moved to private pasture. The type of pasture varies—some are moved to owned pasture, some to leased pasture. Some pasture is irrigated grass or grass/alfalfa mix, some is crop residue—corn and onion are common in Delta County. Sheep are generally moved to BLM lands for the winter, generally moving down to the lower desert ranges, in the Delta and Grand Junction areas. Livestock are generally moved back to the home ranch for calving and lambing, as the cycle repeats.

As the debates over grazing on public lands intensify, there is increasingly rapid urban, suburban and exurban development occurring in Colorado and across much of the West. This phenomenon is also creating concerns and becoming the subject of vigorous debate. Is there a connection between rapid human development and livestock grazing on public lands? We believe there is. The loss of farm and ranchland in Colorado averages 250 acres per day (90,000 acres per year), and 11,300 acres per day nationally .

The concern over the loss of undeveloped lands has increased in Colorado to the point that concerned citizens initiated an amendment to the state constitution in the 2000 state elections limiting uncontrolled growth. The initiative failed, but on December 11, 2000, *The Denver Post* printed an editorial stating that growth remains an issue for Colorado and that if the state legislature fails to address the growth issue again in 2001 then concerned citizens are sure to push for another state constitutional amendment. Is there a relationship between urban growth and the maintenance of agricultural operations? We believe there is.

Programs To Preserve Open Space

In Colorado as well as other states, numerous programs to preserve agricultural and undeveloped lands have developed. At least 7 counties and one city in Colorado have created "Open Space" programs. These are county and city government programs that have been created in order to maintain agricultural lands, rangelands and other undeveloped lands. The intent of open-space programs is generally to preserve land for scenic, agriculture, wildlife habitat and buffer values. The programs are generally funded through a tax, often a sales tax but also through special mill levies on property taxes.

Boulder County and the City of Boulder have some of the largest Open Space Programs in the state of Colorado. The City of Boulder pro-

gram started in the 1960's and the Boulder County program, started in the 1970's. Both programs are funded through sales taxes. The City of Boulder has acquired 30,000 acres of land and spent nearly $100 million in acquisition of these lands. Boulder County has acquired 47,000 acres and nearly 13,000 acres with conservation easements, spending nearly $250 million in acquisition. Obviously, the people in Boulder County are concerned with the loss of agricultural and undeveloped lands.

Another method for preserving agricultural and undeveloped lands is a "Conservation Easement". A conservation easement is generally described as a right, an interest in real property or an interest in land . Easements are entirely voluntary and are either donated or sold by landowners at their discretion. These easements vary considerably from state to state and are used to protect a variety of resources on private property from scenic vistas, urban parks, gardens, greenways, wildlife corridors, open space, wetlands, groundwater recharge zones, farmland, cultural and historic lands, habitat and river corridors.

These easements work by restricting or obligating the activities that may occur in the property and thus limiting a landowner's use of the property. The intent is to protect or preserve a particular resource that is provided on the property. A government entity, a charitable corporation, a charitable association or a charitable trust may hold Conservation Easements. Most conservation easements in the last fifteen years have been acquired by charitable trusts - generally called land trusts.

Since the mid-1980's over 650 land trusts have been formed in the United States. In Colorado over 29 land trusts have been formed. These groups have acquired over 3 million acres. In Colorado there are nearly 80,000 acres of land on which there are conservation easements. These figures indicate that Americans believe our undeveloped lands need additional forms of protection. One major caveat in considering conservation easements as a means of preserving open space is that there is some concern as to the long-term ability of these lands to be maintained under the terms of the easement. There has not been a legal challenge to-date in maintaining a conservation easement and there is concern that a legal challenge could break an easement.

Once these lands are acquired they still require some form of management. Management can be custodial or more active. Whatever the level of management there is still a cost associated with management. Boulder County spends nearly $8.0 million for management operations per year. With 4.0 million visitors per year, there is good justification for these costs. Nonetheless, this level of management requires nearly $133 per acre to manage the Open Space lands of Boulder County. There is a price tag associated with the management of Open Space lands.

Is this a rationalization for continued use and abuse of public lands from livestock grazing? Absolutely not. We know that uncontrolled and under-managed grazing can cause resource damage. In general, the public lands have shown a marked improvement in resource conditions in the last 50 years. This is difficult to document on a large-scale basis. The large amount of land involved in such an assessment, combined with the tremendous variation in land types and habitats makes these types of assessments difficult and expensive to complete. As a result, this information is often lacking.

The Grand Mesa, Uncompahgre and Gunnison National Forests began a review of historic photographs and evaluations that were done on the three forests in the late 1940's–1950's. This review has shown tremendous damage had been done to parts of the Forests by improper livestock grazing. When

North Fork Valley with West Elk Mountains in background. Base ranches are located along the river bottom, with National Forests rangelands on the slopes of the mountains. Photo by David Bradford.

these sites were re-evaluated and re-photographed there was significant improvement that has occurred in these areas. These areas have continued to be grazed, with the improvement attributed to improved management. We need to continue to emphasize improved management on public lands where it is inadequate to maintain resource conditions. But we also need to recognize those areas where there is excellent management and use those as examples for others.

A major factor in the improvement of conditions to range lands in the North Fork Valley and Delta County is the educational program initiated by Colorado State University Cooperative Extension Service known as "The Range Management Schools for Ranchers." These schools provide improved range and livestock management to ranchers and produce dramatic on-the-ground improvements. The schools have been taught in western Colorado since 1995. These schools have been an overwhelming success.

They have created a collaborative approach to improved range management on the public lands. The schools have also produced numerous on the ground results. Several ranches in the North Fork Valley have been recognized for their outstanding management. The Campbell and Sons Ranch and the West Elk Livestock Association have been recognized for their management of National Forest rangelands. There is a direct link between the on-the-ground improvements and the Range Management Schools for Ranchers.

We believe these examples demonstrate that livestock grazing can occur on public lands and also accomplish the many resource objectives that the public lands are expected to provide. We believe these examples also strongly demonstrate the relationships between private land ranches in the western valleys in Colorado and the adjacent National Forests.

Our evaluation shows that private land ranches in western Colorado with public land grazing permits are providing significant benefits to the people of the West and the American public in general. These benefits are ecological, social and economic. These so-called public land ranches make up a significant portion of the private lands in many western counties. As a consequence they produce a significant portion of native plant and wildlife habitats in the limited, mostly privately owned valley bottoms. The conversion of these agricultural areas to human housing developments causes distinct losses of habitat in these valley bottoms.

In addition, these ranches provide a significant amount of the open space that characterizes rural western Colorado. Development on agricultural lands is creating increasing concerns for the public. The loss of open space and the conversion of the rural landscape to an urban, suburban and exurban environment is creating increasing concerns for western communities. Government sponsored "Open Space" programs and "Conservation Easements" can help mitigate the loss of these open spaces but they are expensive and still require some type of on-going land management. The rapid development of housing is also creating an economic impact that rural counties are struggling to deal with.

If we are to continue to discuss the removal of livestock grazing from public lands, we need to consider what will happen to the ranches that currently hold those grazing permits. Will management on those private lands change? Will they remain as active ranches? Will they be sold and subdivided for housing? There are existing examples. Numerous Colorado counties, such as Boulder, Larimer, El Paso, Douglas, Eagle, Summit and Routt, once had many ranches that held grazing permits on adjacent national forests. These permits were waived back to the government and livestock grazing no longer is occurring on these areas of the national forests. What has happened to the ranch lands that were attached to those grazing permits? What has happened to the national forest lands since grazing has been eliminated? We can study these examples to see the actual "benefits" of removing grazing from the national forests. To date, this has not been done. If this debate about grazing on national forests is to continue, these questions need to be addressed.

There is a significant relationship between private land ranches in the West and the public land grazing permits that those ranches hold. There are benefits that our communities derive from that relationship. We need to change how we view that relationship. We need to recognize that ranches with public land grazing permits provide significant ecological, social and economic benefits to the communities of the West. These ranches are an integral part of the western landscape. We need to focus on the entire ecosystem and decide what our desired future condition of that ecosystem will be.

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