

Chapter 8 Forage and Livestock Grazing

Introduction

The U.S. land area totals nearly 2.3 billion acres. Of this, grassland, pasture and range account for 614 million acres (27 percent).⁶³ Interior manages about one-third of this total (nearly 200 million acres) as public rangelands.⁶⁴ Public rangelands are important resources, particularly for the Western states, where most of the federal lands grazed by livestock are found, and where grazing has been an integral part of the landscape and lifestyle since the late 1800s. Public rangelands in the 17 Western states have a wide variety of climates, landforms, vegetation types, and social and economic settings.

Interior lands produced nearly 9 million animal unit months (AUMs) of forage. Prices for forage range widely, from \$1.35 to \$17 per AUM. Forage prices do not fully reflect changes to various ecosystem service values provided by rangelands. Forage production is associated with:

- \$1.5 billion in output; and
- Supported 19,000 jobs.

This chapter focuses on rangelands managed by the Bureau of Land Management (BLM), though BIA manages rangelands as well.⁶⁵ BLM manages nearly 18,000 permits and leases held by ranchers who graze their livestock (mostly cattle and sheep) at least part of the year on more than 21,000 allotments. The permits and leases administered by the BLM generally cover a 10-year period and are renewable if the BLM determines that the terms and conditions of the expiring permit or lease are being met. While the number of Animal Unit Months (AUMs)⁶⁶ permitted by the BLM generally remains stable from year-to-year, the actual amount of grazing that takes place each year on BLM-managed lands can be affected by such factors as drought, wildfire, and market conditions.

Over the last 100 years the absolute numbers of livestock have increased in the West and the U.S. as a whole, in order to meet growing demands due to growth in the U.S. population. Over the same period, grazing on public lands has declined. A variety of other factors also have affected cattle numbers over time including: open range closures, which allowed some ranges to recover from the overuse in the late 1800s; publicly funded range improvements; the development of irrigation; increased and routine provision of supplemental feeds; greater attention devoted to breeding; and the ability to routinely shift livestock from public or private range land to feeder and finishing operations in other locations in the West and Midwest.

⁶³ Osteen, Craig, Gottlieb, Jessica, and Vasavada, Utpal, editors. August 2012. *Agricultural Resources and Environmental Indicators*, 2012 Edition. United States Department of Agriculture Economic Research Service, Economic Information Bulletin Number 98.

⁶⁴ BLM manages 155 million acres for livestock grazing; BIA covers 46 million acres used for farming and grazing.

⁶⁵ Data on BIA grazing are available for Arizona, Nevada, New Mexico, and Wyoming, totaling 645,200 AUMs for FY 2012. This compares to BLM's 8.39 million AUMs across fifteen States.

⁶⁶ An AUM is the amount of forage needed to feed a cow, a horse or five sheep for one month. For example, 780 lbs of dry matter forage would sustain a 1,000 beef cow for one month.

Outputs

Grazing on BLM-administered lands decreased in the late 1950s and the late 1960s. During the 1990s about 9 million AUMs annually were billed; this has declined during the 2000s to about 8 million annually. Figure 8-2 shows the number of AUMs BLM permitted and billed annually from 1990 through 2011.⁶⁷ Figure 8-1 shows the downward trend in AUMs used, from 12.8 million in FY 1970 to less than 9 million in FY 2012.⁶⁸ The number of BLM grazing leases and permits has also declined from about 31,000 in 1949 to about 18,700 in 2011. No data are available on the extent to which permittees pasture livestock they do not own on their allotted AUMs.

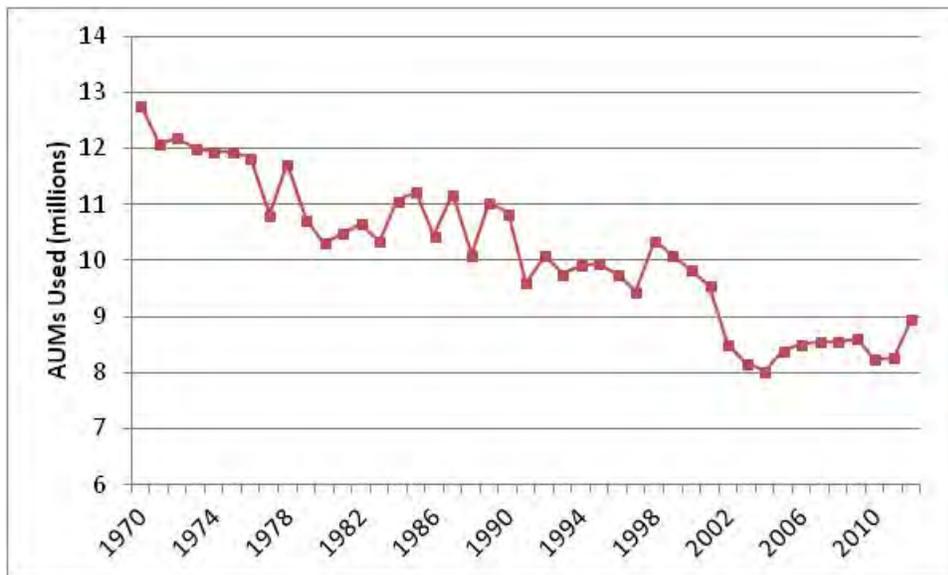


Figure 8-1. BLM AUMs Used, 1970-2012

Source: BLM data.

⁶⁷ BLM does not systematically track “actual use” in its Rangeland Administration System (RAS). BLM does, however, track “billed use” systematically. Billed use can proxy for actual use, but information is not available to know for certain if all billed AUMs were used by the permittee or lessee.

⁶⁸ For Figure 8-1 and Figure 8-2 the BLM Montana State Office administers grazing permits/leases in North and South Dakota, so those permits are shown as part of Montana data. Similarly, Oregon administers permits/leases for the state of Washington which are included as part of Oregon data.

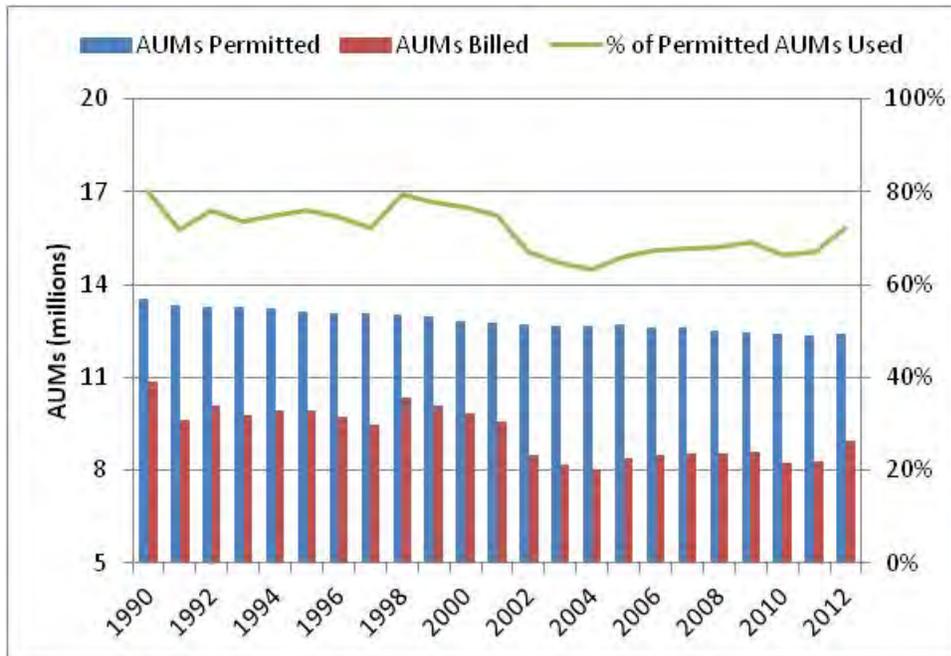


Figure 8-2. Permitted and Billed AUMs, 1990-2012

Source: BLM data.

Table 8-1 shows the BLM grazing fee over 1981 – 2012. A 1968 revision to the grazing fee schedule was based on a 1966 survey, which established a fair market value of \$1.23 per AUM for 1966. The new schedule was put into effect gradually over the 1970s. The fee is adjusted annually for three factors based on costs in western states of (1) the rental charge for pasturing cattle on private rangelands, (2) the sales price of beef cattle, and (3) the cost of livestock production. Congress also established that the annual fee adjustment could not exceed 25% of the previous year’s fee.

Table 8-1. BLM Grazing Fees, 1981-2012

Year	Nominal Fee per AUM	Inflation-Adjusted Fee per AUM (2012 \$)
1981	\$2.31	\$5.83
1982	\$1.86	\$5.50
1987	\$1.35	\$4.67
1988	\$1.54	\$4.48
1989	\$1.86	\$4.28
1990	\$1.81	\$4.06
1991	\$1.97	\$3.89
1992	\$1.92	\$3.78
1993	\$1.86	\$3.67
1994	\$1.98	\$3.58
1995	\$1.61	\$3.48
1996	\$1.35	\$3.38
1997	\$1.35	\$3.30
1998	\$1.35	\$3.25
1999	\$1.35	\$3.18
2000	\$1.35	\$3.08
2001	\$1.35	\$2.99
2002	\$1.43	\$2.95
2003	\$1.35	\$2.88
2004	\$1.43	\$2.81
2005	\$1.79	\$2.72
2006	\$1.56	\$2.63
2007	\$1.35	\$2.56
2008	\$1.35	\$2.46
2009	\$1.35	\$2.47
2010	\$1.35	\$2.43
2011	\$1.35	\$2.36
2012	\$1.35	\$2.31

Source: *Grazing Fees: Overview and Issues*. Congressional Research Service. June 19, 2012; *Study of Fees for Grazing Livestock on Federal Lands*. 1977. DOI and USDA. Page 2-33. <http://tinyurl.com/FedGrazing1977>. Nominal fees adjusted for inflation using the CPI-U.

Economic Contributions, and Economic Values

The primary input provided by public land is forage for cattle and sheep production. In FY 2012, under existing BLM permits and leases a maximum of 12.4 AUMs of grazing could have been authorized for use. Instead, about 9 million AUMs were used. The remaining AUMs were not used due to resource protection needs, forage depletion caused by drought or fire, and economic and other factors. Fees were collected for billed use at the federal grazing fee of \$1.35/AUM. As shown in Figure 8-3, roughly

16% of the total BLM permitted or leased AUMs are in Nevada, with Wyoming and Idaho each having about 15%.

The forage on BLM-administered lands was estimated to support 17,000 jobs and nearly \$1.5 billion in economic output in FY 2012. Estimates of value added are not available. Forage on tribal lands was estimated to provide \$0.1 billion in economic output in FY 2012 and support about 1,400 jobs.

The forage provided by BLM managed lands is an important input in cattle and sheep production. For the 17 Western states, livestock receipts in 2012 totaled about \$70 billion⁶⁹, representing 46 percent of all U.S. livestock receipts, and about 1 percent of the combined gross domestic product for these States. Cattle and calves, and sheep and lambs accounted for about \$49 billion, or 69 percent of Western livestock receipts. Direct economic output attributable to public land forage for FY 2012 was estimated to be approximately \$808 million dollars - or about 1.6% of cattle and calves and sheep and lamb receipts in the 17 Western states. At a state-level, the proportion of receipts attributable to public land forage varies substantially.

Multiple factors influence the levels of grazing BLM authorizes and the use made of permitted AUMs by permit holders. For example, physical factors such as range condition and forage availability play an important role in determining the AUMs available in any given year. Markets for outputs (livestock) and inputs (feed, fertilizer, gasoline) are also important, although market conditions are not solely responsible for the overall downward trend in federal AUMs purchased.

The market demand for forage for livestock grazing depends on cyclic cattle prices (livestock operations require several years to respond to sustained high or low price signals), the prices of other livestock species, the price of forage, the price of supplemental feed and the prices of alternative forage or feed sources, which vary regionally.

Table 8-2. Grazing Fees in 2010 on State Trust Lands

State	Grazing Fee (\$/AUM)
Arizona	\$2.28
California	no set fee
Colorado	35% below private rate
Idaho	\$5.12
Montana	minimum \$6.12
New Mexico	\$3.19
Nevada	variable
Oregon	\$5.30
Utah	\$3.92-\$7
Washington	\$8.78
Wyoming	\$4.64

Source: Montana Trust Land Grazing Lease Rate Valuation Analysis. 2011. State of Montana Department of Natural Resources & Conservation: Trust Management Division.

⁶⁹ Source: ERS Farm Income and Wealth Statistics for Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming (<http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics.aspx>).

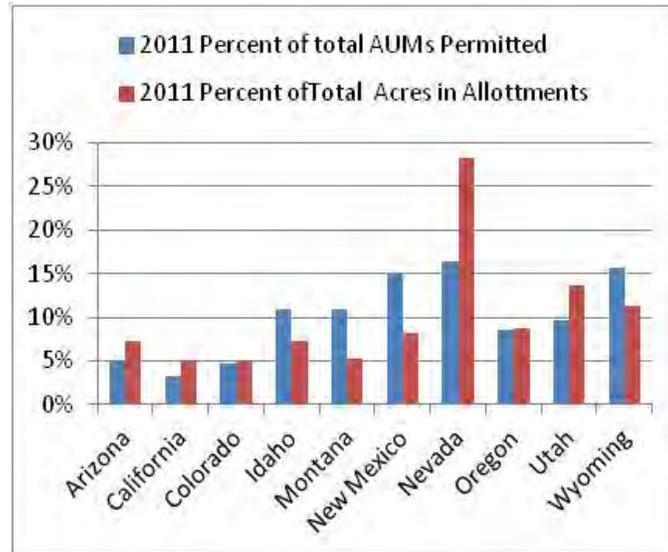


Figure 8-3. Acres Allotted and AUMs Permitted by State

In theory, thus the economic benefit to a rancher of an AUM depends on its productivity and on the costs and productivity of alternative feed sources. An AUM will be leased if the cost is less than the economic benefit a rancher expects the AUM to generate.⁷⁰ Public land grazing also carries substantial lifestyle benefits and “economic benefits” includes more than financial profit. Also the history and tradition of public land grazing may influence individuals’ leasing/permitting decisions as much as the financial statement.

The federal grazing fee is currently \$1.35 per AUM, having declined from \$1.98 in 1994 due to falling beef prices and rising production costs. The BLM grazing fee has historically been a fraction of grazing fees for state lands, and has had little or no impact on the downward trend in the number of AUMs purchased over time. In general terms, grazing fees represent a small proportion (roughly 5%–10%) of total production costs.⁷¹ Fees charged by the other federal agencies, as well as state land agencies and private ranchers, vary widely depending on the purpose for which the fees were established and the approach used to set the fees.⁷²

The fact that BLM forage is often sold at rates lower than prevailing rates associated with alternative sources of forage also creates an incentive to use federal forage before using other forage sources and perhaps to use federal grazing allotments more intensively than privately owned rangeland.

⁷⁰ U.S. Department of the Interior, Bureau of Land Management. 1994. Rangeland Reform '94 Draft Environmental Impact Statement.

⁷¹ Short, Sara D. November 2001. *Characteristics and Production Costs of U.S. Cow-Calf Operations*. USDA Economic Research Service Statistical Bulletin Number 974-3; Rimby, N. and Torell, A. March 22, 2011. *Grazing Costs: What's the Current Situation?* University of Idaho Agricultural Economics Extension Series No. 2011-02.

⁷² U.S. Government Accountability Office. 2005. *Livestock Grazing Federal Expenditures and Receipts Vary, Depending on the Agency and the Purpose of the Fee Charged*. GAO-05-869.

In FY 2011, the average market price of forage was \$16.80/AUM on private land in the 11 Western states,⁷³ a 15% increase from about \$14.60/AUM in 2006.⁷⁴ This value is substantially higher than the FY 2012 average federal grazing fee of \$1.35/AUM. However, differences between the costs of grazing private leases and the costs of grazing public leases should also be recognized. For example, private landlords may provide additional services like fencing, water infrastructure, secure access, check-up visits, and rights to hunt, fish and timber the area. LaFrance (1995) estimated that these services could account for about 30% of the fee. LaFrance estimated that the value for forage alone (net of costs of providing that forage) averaged \$12.85 to \$14.89 (2012 dollars) for the eleven Western States in 1992. In addition, due to the larger geographical extent of public lands ranchers experience higher costs associated with herding, lost animals, and travel. Some research has shown that when these factors are taken into account, the costs of grazing on public and private land in New Mexico, Wyoming, and Idaho are similar (Rimbey and Torell, 2011). Disputes about the extent to which federal grazing fees reflect “fair market value” persist. The extent to which BLM grazing fees are below comparable state or private fees differs by region. Table 8-2 shows the grazing fee in 2010 for state trust lands.

References

LaFrance, J. T. and M. J. Watts. 1995. “Public Grazing in the West and ‘Rangeland Reform ’94’.” *American Journal of Agricultural Economics* 77: 447-461.

Rimbey, N., and L.A. Torell. 2011. “Grazing Costs: What’s the Current Situation?” *Agricultural Economics Extension Series No 2011-02*.

⁷³ Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

⁷⁴ USDA NASS, 2012 Federal Grazing Fee, 1/26/12. A head month is a month’s use and occupancy of range by one animal, except sheep and goats. Compare to an AUM, based on a standard “animal unit” of a 1,000-lb cow.