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# The Importance of Federal Grazing to Cattle Ranching in the Western U.S.

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## INTRODUCTION

In the western United States, cattle ranching is a key part of the economy. The 2022 Census of Agriculture classifies 72,335 agricultural operations in the 11 western states as beef cattle ranches<sup>1</sup> (USDA 2024). These ranches operated on 129.8 million acres of land, accounted for 4.7 million head of beef cows, and generated \$9.4 billion in gross revenue in 2022. Cattle ranching in the region is also important to national beef production. In 2022, cattle ranches in the 11 western states represented 13 percent of the cattle ranches, 39 percent of the ranch land, 22 percent of the beef cows, and 23 percent of the gross revenue of all cattle

ranches in the U.S. In addition to cattle production, cattle ranching in the region also provides \$6.5 billion annually in ecosystem services like open space, wildlife habitat, and recreation opportunities (Maher et al, 2020).

Federal grazing is an integral part of the grazing systems for many cattle ranches in the western U.S., often providing the majority of the forage for many ranches during certain times of the year. As shown in Table 1, land managed by the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) provides 12.9 million Animal Unit Months<sup>2</sup> (AUMs) of cattle grazing annually in the 11 western

1 NAIC code 112111

2 An Animal Unit Month is the amount of forage required for one cow for one month.

Table 1. Cattle Ranching in the 11 Western States, 2022

State	Beef Cattle Ranches (1)	Ranch Land (Acres) (1)	Beef Cows Head (1)	Gross Revenue (1) (000\$)	USFS Authorized Cattle AUMs (2)	BLM Authorized Cattle AUMs (3)	Total Authorized Federal Cattle AUMs
AZ	4,561	8,048,328	162,159	\$181,837	839,019	439,136	1,278,155
CA	8,646	9,758,298	551,808	\$1,678,743	296,512	165,751	462,263
CO	9,980	13,561,205	508,766	\$1,186,929	683,550	236,168	919,718
ID	6,883	3,495,391	323,384	\$913,514	510,216	906,023	1,416,239
MT	7,444	31,009,397	1,094,859	\$1,927,987	446,399	1,127,926	1,574,325
NV	1,086	3,438,276	208,320	\$320,858	177,090	1,097,989	1,275,079
NM	7,215	26,510,668	421,609	\$623,479	672,818	1,388,378	2,061,196
OR	9,565	7,844,466	421,873	\$777,444	404,524	737,896	1,142,420
UT	5,310	3,460,964	253,636	\$407,448	458,620	566,832	1,025,452
WA	7,250	2,399,569	154,074	\$341,546	72,678	0	72,678
WY	4,395	20,249,695	623,963	\$1,089,913	430,811	1,257,810	1,688,621
Total	72,335	129,776,257	4,724,451	\$9,449,698	4,992,237	7,923,909	12,916,146
U.S.	534,633	335,905,281	21,641,386	\$40,938,334	6,162,992	7,923,909	14,086,901
	13.5%	38.6%	21.8%	23.1%	81.0%	100.0%	91.7%

Source:

(1) 2022 Census of Agriculture, NAICS Code 112111

(2) USFS Grazing Statistical Summary FY2020

(3) BLM Public Land Statistics 2022

states (USDI 2023 and USDA 2020). Overall, 92 percent of total federal grazing is located in the 11 western states. A total of 21,567 federal cattle and sheep grazing permittees in the 11 western states use these AUMs (USDI 2023 and USDA 2020).

The purpose of this analysis is to quantify the importance of federal grazing to the cattle ranching industry in the 11 western states by estimating the percentage of beef cows in the region that are located on ranches using federal grazing. This estimate provides an indication of the importance of federal grazing to the cattle ranching industry in the region.

## METHODOLOGY

Since the number of beef cows using federal grazing is not reported by the management agencies, it must be estimated. Previous research has used livestock budgets to estimate this number. Mosley, Smith, and Ogden (1990), using federal grazing dependency estimates from a 1984 livestock budget analysis by Gee (1984), concluded that 50 percent of beef cows in the 11 western states graze at least part of the year on federal grazing. In the 1984 analysis, Gee used 421 livestock budgets from all 11 western states to estimate federal grazing dependency for cattle ranches in the region. Unfortunately,

the number of livestock budgets available for cattle ranches using federal grazing is much more limited today. In addition, budgets are not available for all states, and those that are available are not standardized or updated regularly.

As a result, an alternative methodology was used for this analysis. In 2000, Gentner and Tanaka (2002) conducted a survey of federal lands grazing permittees. Based on the survey results, the authors reported the federal grazing dependency by season of use for cattle ranches using federal grazing. Their estimates were used in this study to estimate the average number of federal AUMs per beef cow. The total number of federal AUMs was divided by this average to estimate the number of beef cows on cattle ranches using federal grazing. Where possible, this estimate was compared with estimates from comparable livestock budgets.

## RESULTS

Table 2 summarizes the federal grazing dependency for cattle ranches using federal grazing by season of use<sup>3</sup> from Gentner and Tanaka. Due to limitations on season of use for federal grazing, federal grazing dependency varies by season, ranging from a peak in the summer when the dependency

3 These are weighted averages based on the number of cows per classification.

is nearly 50 percent to a low of 15 percent in the winter. The annual average dependency for the four seasons is 29 percent.<sup>4</sup>

Table 3 summarizes the estimation of the number of beef cows on cattle ranches using federal grazing. If 16.0 AUMs are required per cow<sup>5</sup> (Workman 1986), a 29 percent dependency implies 4.6 federal AUMs per cow. This estimate is comparable to the 4.7 federal AUMs per cow average for University of Idaho livestock budgets for Idaho cattle ranches using federal grazing (University of Idaho 2021). It also is comparable to the 4.9 AUMs per head average for USFS cattle grazing permits (USDA 2020). No similar estimates were available for BLM cattle grazing permits.

Dividing the total number of federal AUMs of cattle grazing (12,916,146) by 4.6 AUMs per cow results in an estimate of 2.8 million head of beef cows on cattle ranches using federal grazing. This represents nearly 60 percent of the total beef cows on cattle ranches in the 11 western states (4.7 million head).

### Summary and Conclusions

The results from this analysis indicate that federal grazing is important to cattle ranching in the western U.S., supporting nearly 60 percent of the beef cows on cattle ranches in the 11 western states (Figure 1). This represents 2.8 million head of beef cows and gross revenue of \$5.6 billion in 2022. Federal grazing is also important to total cattle production in the region. In 2022, there was a total of 5.6 million head of beef cows in the region (USDA 2024), with cattle ranches accounting for 84 percent (4.7 million head) and the other 16 percent (0.9 million head) located on other types of agricultural operations. Overall, the 2.8 million head of beef cows on regional cattle ranches using federal grazing represent 50 percent of the total beef cows in the 11 western states.

Table 2. Dependency on Federal Grazing for Cattle Ranches

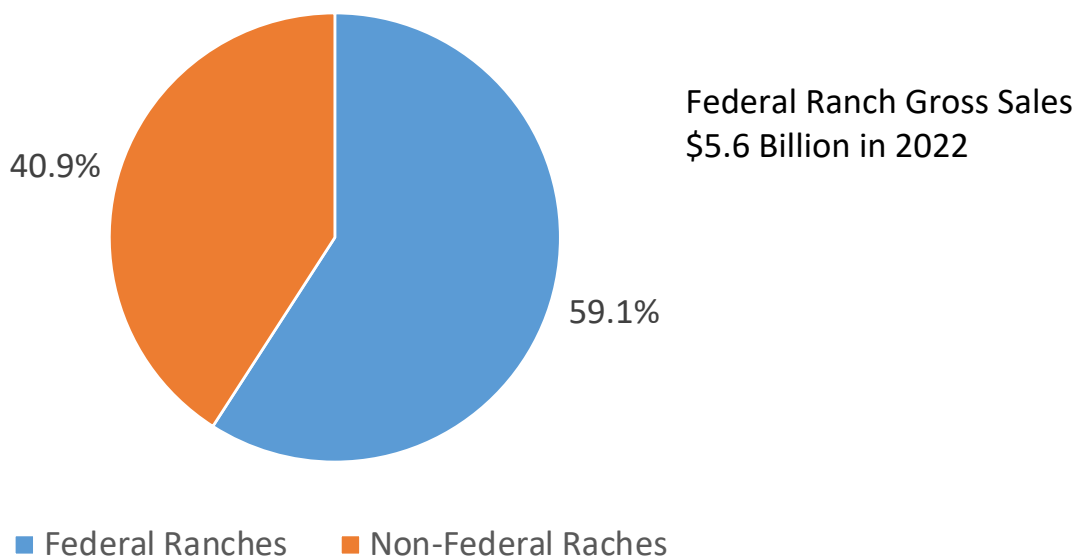
	Spring	Summer	Fall	Winter	Annual
Dependency	22.6%	46.7%	31.3%	15.1%	28.9%

Source: Gentner and Tanaka (2002)

Table 3. Beef Cows on Cattle Ranches Using Federal Grazing in the 11 Western States

		Source
Total AUMs Per Cow	16.0	Workman, 1986
Annual Federal Dependency	28.9%	Gentner & Tanaka, 2002
Federal AUMs Per Cow	4.6	
Total Federal AUMs - 11 Western States	12,916,146	USDA, 2020 & USDI, 2022
Federal AUMs Per Cow	4.6	
Cows on Federal Grazing Ranches	2,793,284	
Cows on Federal Grazing Ranches	2,793,284	
Total Beef Cows - Cattle Ranches	4,724,451	USDA, 2024
Percent Cows - Federal Grazing	59.1%	

Figure 1. Beef Cows on Cattle Ranches Using Federal Grazing in the Western United States



4 These estimates were based on a sample of 1,007 federal cattle grazing permittees.

5 Twelve AUMs for the cow plus four additional AUMs for a portion of the bulls, replacement heifers, etc. in the herd.



## REFERENCES

Gee, C. 1984. The Impact of Alternative Federal Grazing Fees on Western Livestock Businesses. USDA Economic Research Service, PB85-128312.

Gentner, B. and J. Tanaka. 2002. Classifying Federal Public Land Grazing Permittees. *Journal of Range Management*, 55: 2-11, January 2002.

Maher, A, K. Maczko, D. Taylor, and J. Tanaka. 2020. National and State Economic Values of Cattle Ranching and Farming-Based Ecosystem Services on Federal and Private Lands in the U.S. University of Wyoming Extension, B-1367 and Sustainable Rangelands Roundtable Publication Number 7, August 2020.

Mosely, J., E. Smith, P. Ogden. 1990. Seven Popular *MYTHS* About Livestock Grazing on Public Lands. University of Idaho, Idaho Forest, Wildlife, and Range Experiment Station and University of Arizona, Agricultural Experiment Station. (Second Edition) August 1990.

USDA. 2024. 2022 Census of Agriculture. <https://www.nass.usda.gov/Publications/AgCensus/2022/index.php>. Accessed 02/19/2024.

USDA, U.S. Forest Service. 2020. Grazing Statistical Summary Fiscal Year 2020, June 2020.

USDI, Bureau of Land Management. 2023. Public Land Statistics 2022. Volume 207, June 2023.

Workman, J. 1986. *Range Economics*. Macmillan Publishing Company, New York.

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