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Economic Impacts of Removing Federal Grazing Used by Cattle Ranches in Oregon

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Many ranches in Oregon depend on federal grazing to support their livestock operations. The Public Lands Council's federal grazing permit database indicates that there are 2,026 federal grazing permits in Oregon, representing 1.4 million Animal Unit Months[1] (AUMs) of grazing (Oregon Cattlemen's Association 2021). Thirty-three of Oregon's 36 counties have some federal grazing. The top three counties in terms of federal grazing are Malheur (305,936 AUMs), Harney (293,728 AUMs), and Lake (262,537 AUMs).

During certain seasons of the year, federal grazing is the main source of forage for many Oregon ranches. However, in recent years the use of federal land for livestock grazing has become increasingly controversial, with some organizations calling for the complete removal of all livestock grazing from federal lands (Western Watersheds Project 2021). The purpose of this analysis, funded by the National Cattlemen's Beef Association as a contractor for the Beef Checkoff Program, is to estimate the economic impact of removal of federal grazing used by cattle ranches on the overall Oregon economy. Economic impact is estimated in terms of lost direct and secondary economic activity, labor earnings, and employment.

A two-step methodology was used in the analysis. In the first step, a set of linear programming models for cattle ranches with federal grazing in Oregon was used to estimate the changes in cattle production and hay sales when federal grazing was removed. In the second step, the changes in cattle production and hay sales from the ranch models were entered into a 2019 Oregon IMPLAN[2] model (IMPLAN 2021) to estimate the economic impact of removal of federal grazing on the state's overall economy.

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1 An Animal Unit Month is the amount of forage required by one mature beef cow for one month.

2 IMPLAN is a computer program that generates models of regional economies at the county, state, or national level.

Table 1. Annual Economic Impact With and Without Federal Cattle Grazing in Oregon

	With Federal	Without Federal	Change	Percent Change
Cattle Sales (MM$)	$140.9	$66.4	($74.5)	-52.9%
Meadow Hay Sales (MM$)	$27.4	$53.2	$25.8	94.2%
Alfalfa Hay Sales (MM$)	$19.9	$30.1	$10.2	51.3%
Total Direct Impact (MM$)	$188.2	$149.7	($38.5)	-20.5%
Total Secondary Impact (MM$)	$256.6	$161.2	($95.4)	-37.2%
Total Economic Impact (MM$)	$444.8	$310.9	($133.9)	-30.1%
Total Employment (Jobs)	2,805	1,851	(954)	-34.0%
Total Labor Income (MM$)	$114.8	$66.4	($48.4)	-42.2%

Table 1 summarizes the annual economic impact with and without federal grazing from cattle production for Oregon. With federal grazing, the total direct impact for federal grazing dependent Oregon cattle ranches was $188.2 million annually. About 75 percent of this impact was from cattle production; the remainder was from sales of surplus hay. When secondary economic impacts on other regional businesses, such as feed stores, veterinarians, and bulk fuel dealers, were considered, the total economic impact on federal grazing dependent Oregon cattle ranches was $444.8 million. The $444.8 million in total economic activity supported total employment of more than 2,800 jobs and $114.8 million in total labor income.

If federal grazing was removed, the ranch models estimate that cattle sales by federal grazing dependent cattle ranches in Oregon would decrease by $74.5 million (-53 percent) annually. This loss was partially offset by increased hay sales, as much of the hay that was previously fed to cattle became available for sale. The net decrease in direct impact with the increased hay sales is $38.5 million (-20 percent). When secondary impacts were considered, the total economic impact of removal of federal grazing was estimated to be $134.0 million annually (-30 percent). The $134.0 million reduction in total economic activity represented an annual loss of nearly 1,000 jobs (-34 percent) and a reduction of $48.4 million in labor income (-42 percent).

The results indicate that the decrease in secondary impacts from removal of federal cattle grazing is greater than the decrease in direct impacts (-37 percent versus -20 percent). This suggests that while federal grazing is economically important to the ranching sector, it also impacts other sectors of the Oregon economy. The results indicate that a $1.00 decrease in direct ranch sales due to a reduction in federal grazing causes a $3.48 decrease in total economic activity throughout the state, including a $2.48 decrease in secondary impacts.

Additionally, the results show that labor income decreased by more than employment (-42 percent versus 34 percent), which indicates that not only were there fewer jobs without federal grazing but also that the remaining jobs were lower paying. For example, with federal grazing, average labor income per job for the cattle ranching sector was $30,668. Without federal grazing, the average labor income per job for cattle ranching fell by 66 percent to $10,418. This kind of drastic reduction may make it difficult for ranches to remain in operation.

The estimates presented in Table 1 represent the annual economic impact in Oregon from the removal of federal grazing. However, because cattle

ranching using federal grazing has been sustainable over time, removal of federal grazing would have more than a one-year impact. Since federal grazing permits are issued for 10 years, removal of federal grazing could represent a cumulative economic impact over the 10-year life of the permit rather than just a single year impact. In the 10-year scenario, the Net Present Value[3] (NPV) of the total economic impact of removal of federal grazing was estimated to be $941.5 million over 10 years (Table 2). The $941.5 million reduction in NPV of total economic activity represents a loss of more than 9,500 job-years[4] of employment over the 10 years (954 jobs/year x 10 years) and includes the loss of $340.4 million in the NPV for labor income.

Looking beyond the 10-year life of federal grazing permits, grazing permits have historically tended to be renewed over time. As a result, the removal of federal grazing could represent a cumulative loss of livestock production from multiple grazing permits issued over an extended period of time. In a 40-year scenario, the NPV for the total economic impact of removal of federal grazing was estimated to be a reduction of $1.8 billion over 40 years (Table 2). The $1.8 billion reduction in NPV for total economic activity represents a loss of more than 38,000 job-years of employment over the 40 years (954 jobs/year x 40 years) and includes the loss of $646.1 million in NPV for labor income.

The economic loss due to removal of federal grazing would be significant to the Oregon economy, particularly in rural parts of the state where most of this grazing occurs. It is more significant in these rural areas because they are more economically dependent on agriculture and because the opportunities for alternative employment to offset the job loss are more limited. As a result, removal of federal grazing would have an especially negative economic impact on many rural areas of Oregon that may already be economically sensitive. Due to the cumulative nature of the impact, these losses could continue for a number of years into the future.

Table 2. Cumulative Economic Impact From Removal of Federal Cattle Grazing in Oregon

	10-Year NPV @7.0%	40-Year NPV @7.0%
Total Direct Impact (MM$)	($271.1)	($514.5)
Total Secondary Impact (MM$)	($670.4)	($1,272.7)
Total Economic Impact (MM$)	($941.5)	($1,787.2)
Total Labor Income (MM$)	($340.4)	($646.1)

	10-Year Total	40-Year Total
Total Employment (Jobs*)	(9,540)	(38,160)

* One job = 12 months of full or part-time employment

This analysis is based on the assumptions that cattle ranches with federal grazing in Oregon would continue cattle production at a reduced level with the loss of federal grazing and that they would be able to sell their surplus hay production. Operating under these assumptions results in a lower estimate of the potential economic impact of a loss of federal cattle grazing. If some cattle ranches were not able stay in production at the reduced level of federal grazing, the economic impact could be greater. The extent of this impact would depend on how many ranches went out of business and what happened to the private land associated with these operations.

References

IMPLAN: Economic Impact Analysis for Planning. 2021. https://www.implan.com.

Oregon Cattlemen's Association. 2021. Public Lands Council's federal grazing permit database. Personal communication, January 21, 2021.

Western Watersheds Project. 2021. https://www.western.watersheds.org

3 Net Present Value is what a future revenue stream is worth today.

4 A job-year represents 12 months of full or part-time employment.

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