



GRAZING FEES ON PUBLIC LANDS IN NORTH DAKOTA

Larry Leistriz and Edward Dunn

INTRODUCTION

The range livestock industry has a substantial influence on the regional economy of the plains and western states. In South Dakota, for instance, cattle and calves accounted for 51.7 per cent of total agricultural receipts in 1969, while in Montana sales of cattle and calves produced 54.9 per cent of the state's total 1969 agricultural receipts.

In North Dakota, sales of cattle and calves produced receipts of \$185 million in 1969. This represents nearly 25 per cent of North Dakota's total receipts for all farm products sold in 1969.

The federal government presently owns much of the land used for range livestock production in the United States (about one-third of the nation's total land area). Federal lands are located in all states, but the greatest acreages are found in the

western states and Alaska. In several western states, more than half of the total land area is in federal ownership. In North Dakota, 4.8 per cent of the total land area was federally owned in 1968, amounting to 2,119,375 acres (Table 1).

Table 1. Federally owned land in North Dakota, 1968.

Administered By	Number of Acres
Forest Service	1,104,958
Corps of Engineers	550,854
Fish and Wildlife	280,719
Bureau of Land Management	75,120
National Park Service	69,034
Bureau of Reclamation	18,930
Others	19,760
Total federal owned land	2,119,375
Total state land area	44,452,480

Source: Public Land Law Review Commission, *One-Third of the Nation's Land*, a report to the President and to the Congress, 1970, pp. 327-334.

The federal rangelands of North Dakota are administered primarily by the Forest Service as a part of the National Grasslands Program.

Dr. Leistriz and Dunn are assistant professors, Department of Agricultural Economics.

The National Grasslands in North Dakota

The National Grasslands in North Dakota had their origin in the Land Utilization Projects established during the 1930's. The main objective of the Land Utilization program was to remove submarginal farm land from farming. Conversion of such lands to uses for which they were better adapted, such as grazing, was expected to promote the stability of family farms and ranches and to stabilize the local economy of areas where Land Utilization Projects were established.

Three National Grasslands are located in North Dakota. The largest is the Little Missouri National Grassland, located in Slope, Golden Valley, Billings and McKenzie counties. This grassland encompasses about one million acres, and provided about 362,000 animal unit months of grazing in 1970. The Sheyenne National Grassland, located in Ransom and Richland counties, consists of about 71,000 acres of grazing land, and provided approximately 63,000 animal unit months of grazing in 1970. The Cedar River National Grassland, located in Sioux and Grant counties, includes about 6,700 acres of rangeland, and provided about 2,500 animal unit months of grazing in 1970.

The three grasslands, which are used for grazing by several hundred farmers and ranchers and which provided more than 425,000 animal unit months of grazing in 1970, are an important resource for range livestock production in North Dakota. Range livestock production, in turn, is a substantial source of agricultural receipts in North Dakota.

Federal Regulation of Grazing

The conditions under which stockmen are permitted to use the federal lands for grazing are crucial to the range livestock industry. Grazing use of federal rangelands is controlled primarily by the Forest Service, U.S. Department of Agriculture; and the Bureau of Land Management, U.S. Department of the Interior. Both agencies have established comprehensive regulations governing the season of grazing use, the number of livestock which may be grazed, and the fee to be paid for the privilege of grazing.

Fees and permits for grazing on lands included in the national forests were first adopted in 1905. Grazing permits for specific numbers of animals for a specific number of months were issued to ranch operators with sufficient "base property" to support the livestock when they were not on public land. The permit system was designed to prevent overgrazing of public lands and also to stabilize

the regional economies of ranching areas. The permit system is presently used to control grazing of the national grasslands as well as the national forests. Since the grazing permit system was put into effect, grazing fees have been increased periodically. In 1969, the Forest Service adopted a new fee system which called for a substantially higher level of fees.

The grazing fee formula proposed by the federal government is based upon lease rates on privately owned grazing lands. The base grazing fee for public land users is established by subtracting from the lease rates of private grazing land the costs incurred by users of public lands which are not incurred by lessees of privately owned pastures. The base grazing fee was established using data collected by the Statistical Reporting Service in 1966. The base grazing fee is adjusted annually by an index of the preceding year's private land lease rates. This index has 1966 as its base year.

Economic Impact of Increases in Grazing Fees

The proposed schedule of higher grazing fees in future years raises a number of questions. The stockman may wonder what effect the new fee schedule will have on his income. Community leaders and local businessmen have asked how great the impact of increased fees on the area economy will be.

Grazing fees paid for the use of federal rangelands are a direct operating cost for a ranch operator, the same as cash outlays for purchased feed or hired labor. In the short run, an increase in grazing fees can be expected to be fully reflected in higher total operating costs and lower net ranch income. The relative magnitude of the impact of an increase in grazing fees on ranch income can be expected to depend upon the relative importance of federal rangeland as a source of feed. The ranches obtaining the largest proportion of their feed from federal rangelands would logically experience the greatest relative decrease in ranch income from an increase in grazing fees.

A decrease in ranch income can be expected to lead to a decrease in expenditures by ranchers for production inputs and consumer goods. As non-agricultural businesses would then sell fewer goods and services to the agricultural sector (the ranchers), non-agricultural income would also be expected to decrease. Thus, an increase in grazing fees would be expected to have a direct and an indirect effect on the level of total income of the local or regional economy. The direct or primary effect is a reduction in ranch income. The indirect

or secondary effect is a reduction in income of other businesses as a result of the initial decrease in ranch income.

A method for measuring the secondary effects of an initial change in the income of one sector of an economy is provided by input-output analysis. An input-output model for North Dakota has been developed and tested, and was employed to estimate the total impact of grazing fee increases on the North Dakota economy.

Estimate Total Impact

The first step in estimating the total impact of an increase in grazing fees is to estimate the direct or primary impact of increased grazing fees on net ranch income. In 1970, five grazing associations in North Dakota used the national grasslands. These associations paid grazing fees for approximately 425,600 animal unit months of grazing. Four of the grazing associations paid a grazing fee of \$0.70 per animal unit month (AUM), while the Sheyenne Valley Grazing Association paid a fee of \$1.11 per AUM. The higher grazing fee paid by the Sheyenne Valley Grazing Association results from a higher base grazing value on the Sheyenne National Grassland. This higher base grazing value can be attributed to several factors, including the higher carrying capacity of that grassland.

If the new grazing fee schedule were applied without modification, the fee to be paid in future years would be approximately \$1.65 per AUM, assuming no changes in private pasture lease rates from their 1970 levels (Changes in private pasture lease rates would bring corresponding proportional changes in grazing fee levels.) Thus, the total of grazing fees paid annually is estimated to be approximately \$378,500 greater (see Table 2) with the new fee schedule.

Table 2. Estimated reductions in gross receipts resulting from and initial decrease in livestock sector income, North Dakota¹.

Sector	Reduction in Gross Receipts
Crops	\$ 130,950
Livestock	415,113
Wholesale and Retail Trade	246,495
Service	32,748
Transportation, Communications and Public Utilities	14,651
Construction	90,860
Finance, Insurance and Real Estate	34,412
Total Business Sectors	965,226
Households ²	313,881
Government	18,248
TOTAL (All Sectors)	\$1,297,355

¹Initial decrease in livestock sector income is \$378,500.

²Proprietors' incomes, wages and salaries, and other household receipts.

Assuming that the grazing fee increase would be fully reflected as a decrease in net ranch income, the new fee schedule would cause a direct or primary income reduction in the livestock sector of the North Dakota economy of \$378,500. This income reduction could be partially offset, however, by an increase in revenues of county and local units of government. This increase would result from the Forest Service practice of transferring 25 per cent of the grazing fee revenue received to local governments in lieu of the taxes which would be collected if the land were in private ownership. The 25 per cent local share of the anticipated increase in grazing fee payments would amount to \$94,625.

Indirect Effects

The second step in estimating the total impact of increased grazing fees on the North Dakota economy is to estimate the indirect effects. Employing the input-output model, the initial decrease of livestock sector income is estimated to lead to a total reduction in gross receipts of \$1,297,355. This total reduction is the sum of the direct or primary effect (\$378,500) and the secondary or indirect effects, which totaled \$918,855. Table 2 shows the total of direct and indirect effects by major sectors of the North Dakota economy. The livestock sector has the largest total gross receipts decrease with a reduction of \$415,113. This total decrease is the sum of a \$36,613 indirect reduction of gross receipts in the livestock sector and the initial direct reduction of livestock sector income of \$378,500. The wholesale and retail trade sector has a reduction of gross receipts of \$246,495, while the crops sector has a gross receipts reduction of \$130,950. The household sector experiences a gross receipts reduction of \$313,881.

The impact of the grazing fee increase appears likely to be concentrated most heavily on the local trade areas near the national grasslands. The Williston and Dickinson trade areas in western North Dakota are likely to be the major trade areas which would be affected the most, because they contain the Little Missouri and Cedar River National Grasslands. Smaller local centers located close to the grasslands would probably be affected even more by the increase in grazing fees.

More detailed analysis of the effects of increases in grazing fees on federal rangelands is included in the Department of Agricultural Economics Report No. 76, which may be obtained at no charge upon request to the Department of Agricultural Economics, North Dakota State University, Fargo.