

Economic Importance of Sheep Production in Wyoming

Introduction

Although sheep production has declined from historical levels, it remains a viable part of the Wyoming economy. The 2012 Census of Agriculture estimates that there were 354,785 head of sheep and lambs in Wyoming in 2012 (Table 1). Of this total 84 percent were in agricultural operations with 1,000 head or more of sheep and lambs. This suggests that while there are a large number of farm flocks in the state, most of the sheep production in Wyoming is associated with fairly large range flocks. The Census also estimates that total wool production in Wyoming for 2012 was 2.4 million pounds, and that 261,820 head of sheep and lambs were sold in 2012.

Based on the North American Industry Classification System, the 2012 Census of Agriculture classifies 224 agricultural operations in Wyoming as commercial sheep ranches whose primary enterprise is sheep production. These 224 operations manage 1.1 million acres of owned or leased land, excluding land used under government permits on a per-head basis. On average each of these commercial sheep ranches represents over 5,000 acres of open space in the state. The total capital investment by these sheep ranchers in land, buildings, and equipment is estimated to be \$399.0 million or \$1.8 million per ranch.

Current Economic Impact

Table 2 summarizes the economic impact of sheep production in Wyoming in terms of jobs and income generation. These economic impacts were estimated using a 2013 IMPLAN model for the state of Wyoming. The sheep sector in the model was modified to better reflect sheep ranching in Wyoming based on a Wyoming Range Sheep Budget for a 1,000 ewe ranch in Southwest Wyoming, selling lambs in the fall. This budget was developed by Bridger Feuz, Wyoming Extension Livestock Marketing Specialist, through interviews with sheep producers in the region (Table 3).

Based on the Wyoming 2013 Agricultural Statistic estimate of 225,000 ewes in Wyoming during 2013, it is estimated that the total value of production from sheep in 2013 was \$33.5 million. If secondary economic impacts associated with other businesses that provide services and products to the sheep industry and workers' household expenditures are considered the total economic impact of sheep production in Wyoming for 2013 is estimated to be \$66.1 million. This represents about two dollars of total economic impact for each dollar of sheep production. The \$66.1 million of total economic impact associated with sheep production in Wyoming supported total employment of 835 jobs and total labor earnings of \$27.0 million representing average earnings per job of \$32,317.

Impact of New Labor Rules

The sheep industry in Wyoming relies on foreign workers to work as herders. Recently the U.S. Department of Labor has released a draft of new rules for foreign workers holding H-2A visas working in open range operations (WyoFile, 4/28/215). The existing regulations gave foreign herders a longer visa stay, allowed them to live in mobile housing, and set the monthly wage for Wyoming at \$750, plus room and board. The proposed new regulations would, within five years, more than triple the wages to \$2,400 per month, plus board and room.

On an annual basis the proposed wage increase would increase the operating costs in the Wyoming Range Sheep Budget by \$39,600 for the two foreign herders. This would increase total operating costs in the budget by 40 percent to \$137,447.50. At current prices this would reduce income above operating costs by 78 percent to \$11,313 and would reduce returns to land, risk, and management to a negative -\$16,237.

In order to pay total operating costs in the existing Wyoming Range Sheep budget, total receipts per ewe would have to be at least \$97.85. An analysis of total receipts per ewe over the past 20 years indicates that the sheep operation would have been able to pay total operating costs 85 percent of the time (Ritten). In order to cover both total operating costs and total ownership costs in the existing Wyoming Range Sheep budget, total receipt per ewe would have to be at least \$125.40 per ewe. Over the past 20 years the sheep operation would have been able to pay both total operating costs and total ownership costs 40 percent of the time.

In order to pay total operating costs with proposed wage rate changes, total receipts per ewe would have to be at least \$137.45. Based on historic total receipts per ewe over the past 20 years, the sheep operation would have been able to pay total operating costs only 30 percent of the time with the increased costs. In order to pay both total operating costs and total ownership costs, total receipts per ewe would have to be at least \$165.00. Based on historic total receipts per ewe, the sheep operation would have been able to pay both total operating and total ownership cost only 8 percent of the time with the increased costs.

The level of reduced profitability for sheep operations due to the proposed changes in H-2A visa would significantly increase the financial risk for sheep operations in Wyoming, particularly the 85 percent with 1,000 head or more of sheep and lambs.

Table 1.
Selected Characteristic of Sheep Production in Wyoming, 2012

Characteristic	Amount
Sheep & Lamb Inventory	354,785 head
Wool Production	2,437,181 pounds
Sheep & Lambs Sold	261,820 head
Number of Commercial Sheep Ranches	224 operations
Owned & Leased Land	1,122,940 acres
Capital Investment	\$398,885,536

Table 2.
Economic Impact of Sheep Production in Wyoming

	Per Ranch	Per Ewe	State Total
Value of Production	\$148,761	\$148.76	\$33,471,113
Total Economic Impact	\$293,930	\$293.93	\$66,134,165
Total Employment	3.7 Jobs	.003714 Jobs	835.6 Jobs
Total Labor Earnings	\$120,014	\$120.01	\$27,003,231
Ave. Earnings Per Job	\$32,317	\$32,317	\$32,317

Table 3. Wyoming Range Sheep Budget
1000 Ewes - Sell Lambs in Fall

	Weight	Unit	Number of Head Units	Price Cost Unit	Total Value	Per Ewe Value or Cost
Gross Receipts						
Lambs	90	lb	840	1.65	124,740.00	124.74
Cull Ewes	150	lb	150	0.32	7,200.00	7.20
Cull Rams	225	lb	5	0.30	337.50	0.34
Wool - Ram, fine wool	12	lb	15	2.25	405.00	0.41
Wool - Ram, meat breed	8	lb	15	0.65	78.00	0.08
Wool - ewe	10	lb	1000	1.60	16,000.00	16.00
Total Receipts					\$ 148,760.50	\$ 148.76
Operating Costs						
Alfalfa Hay		ton	38	190.00	7,220.00	7.22
Feed Grain		cwt	215	7.00	1,505.00	1.51
Salt/Mineral		lb	4000	0.15	600.00	0.60
Federal Range		AUM	1500	1.35	2,025.00	2.03
Pasture		AUM	900	15.00	13,500.00	13.50
Hauling		head	1000	2.70	2,700.00	2.70
Marketing		head	1000	1.50	1,500.00	1.50
Predator Assessment		head	1000	1.00	1,000.00	1.00
Shearing - ewe		head	1000	3.80	3,800.00	3.80
Shearing - ram		head	30	7.75	232.50	0.23
Camp Supplies		head	1000	5.00	5,000.00	5.00
Dog Food		head	1000	2.00	2,000.00	2.00
ASI lamb checkoff		head	1100	0.50	550.00	0.55
Veterinary Medicine		\$	625	1.00	625.00	0.63
Machinery (fuel, lubrication, Repair)		\$	1200	1.00	1,200.00	1.20
Vehicle (Fuel, Repair)		\$	8600	1.00	8,600.00	8.60
Equipment (repair)		\$	520	1.00	520.00	0.52
Housing and Improvements (repair)		\$	720	1.00	720.00	0.72
Hired Labor		Herder	15000	2.00	30,000.00	30.00
Owner Labor		hour	675	20.00	13,500.00	13.50
Interest on Operating Capital		\$	21000	0.05	1,050.00	1.05
Total Operating Costs					\$ 97,847.50	\$ 97.85
Income Above Operating Costs					\$ 50,913.00	\$ 50.91

Ownership Costs						
Capital Recovery						
Purchased Livestock	\$	5500	1	5,500.00	5.50	
Housing and Improvement	\$	1000	1	1,000.00	1.00	
Machinery	\$	500	1	500.00	0.50	
Equipment	\$	2500	1	2,500.00	2.50	
Vehicles	\$	2800	1	2,800.00	2.80	
Interest on Retained Livestock	\$	125000	0.05	6,250.00	6.25	
Taxes and Insurance	\$	800	1	800.00	0.80	
Overhead	\$	8200	1	8,200.00	8.20	
Total Ownership Costs				\$ 27,550.00	\$ 27.55	
Total Costs				\$ 125,397.50	\$ 125.40	
Returns to Land, Risk and Management				\$ 23,363.00	\$ 23.36	