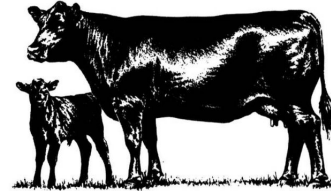


Cow-Calf Budget: 500-head
Southwestern Idaho – Marsing/Murphy Area,
Owyhee County
Summer on Federal & State Range,
Winter on Harvested Feeds & Crop Aftermath
By Sidnee Rose Hill and Kord Killpack



Background and Assumptions

University of Idaho costs and returns estimates use economic costs—all resources are valued based on market price or opportunity cost. This budget presents typical costs and returns per cow for a 500-head cow-calf operation in the Marsing/Murphy area of Owyhee County in southwestern Idaho plus total costs and returns for the ranch. The forage source is federal and state range. Feeding is necessary in the winter.

Livestock Investment

The livestock investment consists of 500 cows, 25 bulls, and 10 horses. The culling rate is 15 percent, and the cow herd has a 2 percent death loss. The ranch buys two-year-old bulls and replaces them every 4-5 years. The weaned calf crop is 90 percent of the number of cows wintered. Of the 95 weaned heifer calves selected from the calf crop as replacements, 10 are culled because of non-breeding or poor quality, leaving an annual net replacement of 85 head.

Machinery and Equipment

The cow-calf enterprise uses two 3/4-ton pickups (4x4), a 2-ton truck, an 80 HP tractor with a loader, a 150 HP tractor, a feed wagon, stock trailer and a UTV and three ATVs (see Table 4). This equipment complement is minimal but considered adequate. Values on these investments are calculated at 50 percent of new replacement cost to reflect typically aged but functional ranch equipment.

Haying equipment is not included in this budget as hay production is treated as a separate enterprise. Hay and other feeds used as inputs in this cow-calf budget are valued at the market price received by growers FOB the farm.

Buildings and Improvements

The ranch has 25 miles of 4-wire fence, one barn, one set of corrals with working alleys, a set of portable panels, a squeeze chute, a calf table, and an assortment of veterinary equipment. Water is supplied from natural sources. Buildings and improvements are valued at 80 percent of new replacement cost.

Management Practices

The cows calve between February 15 and April 15, but some will calve later in the year. In the winter months, cattle are fed meadow hay and a protein supplement. Replacement heifers are fed alfalfa hay.

Cattle are moved from the ranch to federal or state range around April 15 and graze a combination of federal and state rangeland until August 31. On September 1 cattle are moved to state and private range for grazing through the end of October. After cattle have been gathered and worked, they are moved to crop aftermath until winter-feeding begins around December 15. The freight/shipping distance to pasture is calculated at 80 miles,

with the shipping cost being \$0.125 per cow/per loaded mile.

The top 95 heifer calves are kept as replacements, while the remaining 130 heifers and 225 steer calves are sold in November. Calves are weaned and loaded on trucks the same day. All steer and heifer calves are sold direct.

The costs of selling cattle include checkoff/brand inspection, freight/trucking, and sales commissions. Checkoff/brand inspection costs pertain to all cattle sold in the enterprise including cull animals. Sales commission and freight costs pertain to cull animals only since they are sold through the sale yard in July and December. Freight/trucking distance for market is calculated at 50 miles, with freight cost being calculated at \$0.125 per cow/per loaded mile.

Veterinary Care

Veterinary care for calves includes viral treatments and 8-way vaccinations (given twice during the year), implants and selenium supplements. Heifer calves are also vaccinated for brucellosis. Cows, bulls, and replacement heifers receive vaccinations for viral infections, including BVD and bacterial infections such as vibriosis and leptospirosis. The herd is treated annually for parasites and the cows are pregnancy checked in the fall. Bulls also receive a breeding soundness evaluation, fertility and trichomoniasis test in late winter/early spring.

Labor Costs

Labor provided by the operator is valued at \$31.12 per hour, based on average wages for agricultural supervisors. Regular livestock labor is valued at \$18.19 per hour. These hourly rates include all applicable payroll taxes and benefits.

Budget Format

In addition to the Background and Assumptions pages, this publication has four tables presenting a variety of costs and returns information.

Table 1 shows both expected revenue and expenses. Expenses are broken into two main categories: operating and ownership. Operating expenses are those that typically vary with the level of production and involve inputs that are used in a single production cycle. Ownership expenses include a systematic cost recovery over the useful life for inputs used in the production process that have a useful life of more than one year.

Table 2 is a monthly summary of the cash flow of revenues and expenses based on when the operation occurs and when inputs are purchased.

Table 3 is a monthly summary of feed requirements for the different classes of livestock. Daily feed quantities per animal are summarized below.

Table 4 lists the purchase price and salvage value of equipment used in this operation, as well as annual capital recovery and interest on retained livestock.

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Table 1: Cow-Calf Budget - Marsing/Murphy Area - Owyhee County, 500 Cow - 2021

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Summer on Federal & State Range, Winter on Federal & Private Range

No. of Cows: 500

	Weight Each	Unit	Total Number of Head or Units	Price or Cost/Unit	Total Value	Value or Cost/Head	Your Value
GROSS RETURNS							
Steer Calves	475	lbs	225	1.78	190,238	380.48	
Heifer Calves	425	lbs	130	1.73	95,583	191.17	
Cull Cows	1240	lbs	75	0.67	62,310	124.62	
Cull Bulls	1800	lbs	6	0.88	9,504	19.01	
Cull Replacement Heifers	900	lbs	10	1.12	10,080	20.16	
TOTAL GROSS RETURNS					\$367,714	\$735.43	
OPERATING COSTS							
Alfalfa Hay		ton	99	180.25	17,845	35.69	
Meadow Hay		ton	707	145.00	102,515	205.03	
Protein Supplement		cwt	225	34.00	7,650	15.30	
Federal Range		AUM	2,820	1.35	3,807	7.61	
State Range		AUM	350	7.32	2,562	5.12	
Private Range		AUM	1,030	19.50	20,085	40.17	
Crop Aftermath		AUM	924	21.66	20,014	40.03	
Salt/Mineral		cwt	100	11.00	1,100	2.20	
Veterinary/Medicine		\$	1	13,208.71	13,209	26.42	
Freight/Trucking to Market		head	91	6.25	569	1.14	
Freight/Trucking to & from Pasture		head	525	10.00	5,250	10.50	
Hired Labor		hour	2,700	18.19	49,113	98.23	
Owner Labor		hour	1,700	31.12	52,904	105.81	
Commission		head	91	22.50	2,047	4.09	
Checkoff/Brand Inspection		head	446	2.96	1,320	2.64	
Machinery (Fuel, Oil, Repair)		\$	1	7,287.39	7,287	14.57	
Vehicles (Fuel, Repair)		\$	1	14,609.46	14,609	29.22	
Equipment (Repair)		\$	1	2,233.77	2,234	4.47	
Buildings & Improvements (Repair)		\$	1	3,403.84	3,404	6.81	
Interest on Operating Capital		\$	81,881	5.00%	4,094	8.19	
TOTAL OPERATING COSTS					\$331,618	\$663.24	
NET RETURNS ABOVE OPERATING COSTS					\$36,096	\$72.19	
OWNERSHIP COSTS							
Capital Recovery:							
Purchased Livestock		\$	1	25,622	25,622	51.24	
Buildings & Improvements		\$	1	6,725	6,725	13.45	
Machinery		\$	1	4,515	4,515	9.03	
Equipment		\$	1	1,213	1,213	2.43	
Vehicles		\$	1	9,743	9,743	19.49	
Interest on Retained Livestock		\$	758,000	5.06%	38,355	76.71	
Taxes & Insurance		\$	1	1,500	1,500	3.00	
General Overhead		\$	1	8,000	8,000	16.00	
TOTAL OWNERSHIP COSTS					\$95,673	\$191.35	
TOTAL COSTS					\$427,291	\$854.58	
NET RETURNS ABOVE TOTAL COSTS					(\$59,577)	-\$119.15	

Table 2: Monthly Summary of Returns and Expenses.

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	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Value
Production:													
Steer Calves											190,238		190,238
Heifer Calves											95,583		95,583
Cull Cows							18,693					43,617	62,310
Cull Bulls							9,504						9,504
Cull Replacement Heifers											10,080		10,080
Total Receipts	0	0	0	0	0	0	28,197	0	0	0	295,900	43,617	367,714
Operating Inputs:													
Alfalfa Hay	4,461	4,461	4,461	2,231								2,231	17,845
Meadow Hay	25,629	25,629	25,629	12,814								12,814	102,515
Protein Supplement	2,550										2,550	2,550	7,650
Federal Range			3,807										3,807
State Range			2,562										2,562
Private Range									10,043	10,043			20,085
Crop Aftermath									5,003	5,003	10,007	5,003	20,014
Salt/Mineral	92	92	92	92	92	92	92	92	92	92	92	92	1,100
Veterinary/Medicine			3,302								9,907		13,209
Freight/Trucking to Market		57						341			171		569
Freight/Trucking to & from Pasture			2,625								2,625		5,250
Hired Labor	2,456	4,911	9,823	9,823	4,911	2,456	2,456	2,456	2,456	2,456	2,456	2,456	49,113
Owner Labor	4,409	4,409	4,409	4,409	4,409	4,409	4,409	4,409	4,409	4,409	4,409	4,409	52,904
Commission		41							266		1,740		2,047
Checkoff/Brand Inspection		26							172		1,122		1,320
Machinery (Fuel, Oil, Repair)	607	607	607	607	607	607	607	607	607	607	607	607	7,287
Vehicles (Fuel, Repair)	1,217	1,217	1,217	1,217	1,217	1,217	1,217	1,217	1,217	1,217	1,217	1,217	14,609
Equipment (Repair)	186	186	186	186	186	186	186	186	186	186	186	186	2,234
Buildings & Improvements (Repair)	284	284	284	284	284	284	284	284	284	284	284	284	3,404
Interest on Operating Capital												4,094	4,094
Total Costs	41,890	41,920	59,004	31,662	11,706	9,251	9,251	10,030	19,293	24,296	37,372	35,943	331,618
Net Returns	-41,890	-41,920	-59,004	-31,662	-11,706	-9,251	18,946	-10,030	-19,293	-24,296	258,528	7,674	36,096

Table 3: Monthly Feed Requirements.

Feed	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Alfalfa Hay													
Replacement Heifers	ton	29	27	29									14
Meadow Hay													
Cows	ton	194	175	194									94
Bulls	ton	14	13										7
Horses	ton	4	4	4	2								2
Federal Range													
Cows	AUM				470	470	470	470	470				
Replacement Heifers	AUM				76	76	76	76	76				
Bulls	AUM				30	30	30						
State Range													
Cows	AUM				30	30	30	30	30	100	100		
Replacement Heifers	AUM									15	15		
Bulls	AUM									6	6		
Private Range													
Cows	AUM									400	400		
Replacement Heifers	AUM									61	61		
Bulls	AUM									24	24		
Horses	AUM					10	10	10	10	10	10		
Crop Aftermath													
Cows	AUM											500	250
Replacement Heifers	AUM											30	15
Bulls	AUM											76	38
Horses	AUM											10	5
Salt/Mineral	cwt	9	9	9	9	9	9	9	9	9	9	9	9

Daily Feed Requirements by Livestock Category
(lb fed/head/day)

Livestock Category	Alfalfa or Grass Hay (lb)	Protein Supplement (lb)	No. of Days
Replacement Heifers	20		90
Replacement Heifers		3	60
Cows	25		30
Cows		3	60
Bulls	30		90
Horses	25		90

Table 4: Investment Summary.

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	Total Value	Salvage/Cull Value	Livestock Share	Useful Life	Annual Taxes & Insurance	Annual Capital Recovery
Buildings, Improvements and Equipment						
Fencing	63,000	0	100	25	226.80	\$4,473.00
Corrals & Pens	26,750	10,700	100	30	96.30	\$1,043.25
Water System	5,900	0	100	20	21.24 ¹	\$477.90
Barn	12,500	1,250	100	30	45.00	\$731.25
Feed Wagon	800	0	100	10	2.88	\$104.00
Squeeze Chute	1,800	180	100	10	6.48	\$210.60
Vet Equipment	650	65	100	15	2.34	\$56.75
Stock Trailer	11,550	1,155	100	20	41.58	\$842.00
Total	\$122,950				\$442.62	\$7,938.74
Purchased Livestock						
Horses	25,000	3,600	100	10		\$2,782.00
Bulls	100,000	19,008	100	4		\$22,839.74
Total	\$125,000					\$25,621.74
Retained Livestock						
Beef Replacement Heifers	108,000	63,504	100			\$5,464.80 ²
Beef Cows	650,000	249,240	100			\$32,890.00 ²
Total	\$758,000					\$38,354.80
Machinery and Vehicles						
80 hp Tractor with Loader	35,600	7,100	20	18	128.16	\$2,451.00
150 hp Tractor	30,000	6,000	55	18	108.00	\$2,064.00
2 Pickups 4X4 3/4 ton	60,000	5,000	100	10	564.00	\$7,150.00
2 Ton Truck	40,000	10,000	50	10	376.00	\$3,900.00
Car	10,000	2,500	25	8	94.00 ¹	\$1,162.50
UTV	7,000	4,000	100	10	65.80	\$390.00
3 ATVs	12,000	1,000	100	10	112.80	\$1,430.00
Total	\$194,600				\$1,270.16	\$18,547.50

¹ Annual capital recovery is the method of calculating depreciation and interest recommended by the National Task Force on Commodity Costs and Returns Measurement Methods.

² Interest on average investment.

This updated budget is based on previous budgets created by Ben Eborn, Scott Jensen, and Neil Rimbey.

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