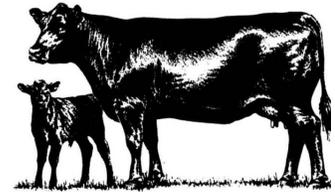


Cow-Calf Budget: 500-head**Southcentral Idaho***Summer on Federal, Private & State Range**Winter Feeding Necessary*

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 Southcentral Idaho plus total costs and returns for the ranch. The forage source is federal, state, and private range. Feeding is necessary in the winter.

Livestock Investment

The livestock investment consists of 500 cows, 20 bulls, and 10 horses. Cows have a useful life of 7 years after they enter the breeding herd. The culling rate is 14 percent, and the cow herd has a 3 percent death loss. The ranch buys yearling bulls and replaces them every 4 years. The weaned calf crop is 88 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 a 1/2-ton pickup, a 3/4-ton pickup (4x4), a 1-ton pickup (4x4), two 80 HP tractors (one with a loader), a feed wagon, a stock trailer, and a gooseneck trailer (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. See EBB2-AH-20 for costs and returns associated with hay production in southeastern Idaho. 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 37 miles of 4-wire fence, one barn, a calving shed, a hay shed, one set of corrals with working alleys, 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 1 and April 30. In the winter months, cattle are fed alfalfa and grass hay. Replacement heifers receive some supplemental protein.

Cattle are moved from the ranch to private range around May 10 then they are hauled to federal or state range around June 10 and graze there until September 30. Some state range is grazed within the federal allotments. On October 1, cattle are moved to private pastures for grazing through the end of October. After cattle have been gathered and worked, they are moved to previously harvested hay ground until winter-feeding begins around December 1. Total

freight/shipping distance for grazing is estimated at 80 miles at a calculated cost of \$0.125 per cow per loaded mile.

Calves are weaned and loaded on trucks the same day. The top 85 heifer calves are kept as replacements, while the remaining 125 heifers and 220 steer calves are sold in October and November. The costs of selling cattle include checkoff/brand inspection, freight/trucking, and sales commissions. The total freight/trucking distance to market is estimated around 30 miles with a calculated cost of \$0.125 per cow per loaded mile. 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. All steer and heifer calves are sold direct.

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 Idaho 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, 500 Cow - 2021

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Summer on Federal & State Range, Winter Feeding Necessary

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	590	lbs	220	1.78	231,044	462.09	
Heifer Calves	550	lbs	125	1.73	118,938	237.88	
Cull Cows	1450	lbs	75	0.67	72,863	145.73	
Cull Bulls	1800	lbs	6	0.88	9,504	19.01	
Cull Replacement Heifers	1000	lbs	10	1.12	11,200	22.40	
TOTAL GROSS RETURNS					\$443,548	\$887.10	
OPERATING COSTS							
Alfalfa Hay		ton	277	180.25	49,884	99.77	
Grass Hay		ton	830	145.00	120,386	240.77	
Corn Silage		ton	18	50.00	900	1.80	
Protein Supplement		cwt	459	34.00	15,606	31.21	
Federal Range		AUM	2,592	1.41	3,655	7.31	
State Range		AUM	379	8.02	3,040	6.08	
Private Range		AUM	1,030	21.67	22,320	44.64	
Crop Aftermath		AUM	924	18.42	17,016	34.03	
Salt/Mineral		cwt	108	11.00	1,188	2.38	
Veterinary/Medicine		\$	1	13,058.69	13,059	26.12	
Freight/Trucking		head	186	13.75	2,558	5.12	
Commission		head	91	30.85	2,807	5.61	
Checkoff/Brand Inspection		head	438	2.96	1,296	2.59	
Hired Labor		hour	2,730	18.19	49,659	99.32	
Owner Labor		hour	1,540	31.12	47,925	95.85	
Machinery (Fuel, Oil, Repair)		\$	1	3,858.03	3,858	7.72	
Vehicles (Fuel, Repair)		\$	1	12,317.78	12,318	24.64	
Equipment (Repair)		\$	1	1,005.20	1,005	2.01	
Buildings & Improvements (Repair)		\$	1	6,701.31	6,701	13.40	
Interest on Operating Capital		\$	93,795	5.00%	4,690	9.38	
TOTAL OPERATING COSTS					\$379,871	\$759.74	
NET RETURNS ABOVE OPERATING COSTS					\$63,677	\$127.35	
OWNERSHIP COSTS							
Capital Recovery:							
Purchased Livestock		\$	1	5,313	5,313	10.63	
Housing & Improvements		\$	1	19,544	19,544	39.09	
Machinery		\$	1	2,709	2,709	5.42	
Equipment		\$	1	1,573	1,573	3.15	
Vehicles		\$	1	6,720	6,720	13.44	
Interest on Retained Livestock		\$	864,000	5.06%	43,718	87.44	
Taxes & Insurance		\$	1	1,778	1,778	3.56	
General Overhead		\$	1	7,000	7,000	14.00	
TOTAL OWNERSHIP COSTS					\$88,355	\$176.71	
TOTAL COSTS					\$468,226	\$936.45	
NET RETURNS ABOVE TOTAL COSTS					(\$24,678)	-\$49.36	

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											231,044		231,044
Heifer Calves										118,938			118,938
Cull Cows	72,863												72,863
Cull Bulls										9,504			9,504
Cull Replacement Heifers	11,200										11,200		11,200
Total Receipts	84,063	0	0	0	0	0	0	0	0	128,442	242,244	0	443,548
Operating Inputs:													
Alfalfa Hay	12,970	11,972	12,970	5,986								5,986	49,884
Grass Hay	31,300	32,504	28,893	14,446								13,242	120,386
Corn Silage			600	300									900
Protein Supplement	3,121	3,121	3,121	3,121								3,121	15,606
Federal Range		439	804	804	804	804							3,655
State Range				122	243	243	243	243	973	973			3,040
Private Range					223	223	223	223	10,714	10,714			22,320
Crop Aftermath											11,344	5,672	17,016
Salt/Mineral	99	99	99	99	99	99	99	99	99	99	99	99	1,188
Veterinary/Medicine		2,612	2,612									7,835	13,059
Freight/Trucking	1,228											1,330	2,558
Commission	2,611											196	2,807
Checkoff/Brand Inspection	259									1,037			1,296
Hired Labor	4,966	8,939	8,939	2,980	2,980	2,980	2,980	2,980	2,980	2,980	2,980	2,980	49,659
Owner Labor	3,994	3,994	3,994	3,994	3,994	3,994	3,994	3,994	3,994	3,994	3,994	3,994	47,925
Machinery (Fuel, Oil, Repair)	213	213	213	213	213	213	213	213	213	213	213	213	3,858
Vehicles (Fuel, Repair)	322	322	322	322	322	322	322	322	322	322	322	322	12,318
Equipment (Repair)	1,026	1,026	1,026	1,026	1,026	1,026	1,026	1,026	1,026	1,026	1,026	1,026	1,005
Buildings & Improvements (Repair)	558	558	558	558	558	558	558	558	558	558	558	558	6,701
Interest on Operating Capital												4,690	4,690
Total Costs	62,667	65,799	64,150	33,971	10,462	10,462	9,658	9,658	20,878	21,915	29,701	42,100	379,871
Net Returns	21,395	-65,799	-64,150	-33,971	-10,462	-10,462	-9,658	-9,658	-20,878	106,526	212,543	-42,100	63,677

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	29	29	14								14
Grass Hay													
Cows	ton	194	194	194	94								94
Bulls	ton	14	14										7
Horses	ton	4	4	4	2								4
Corn Silage													
Bulls	ton			38	19								
Federal Range													
Cows	AUM				235	470	470	470	470				
Replacement Heifers	AUM				38	76	76	76	76				
Bulls	AUM				15	30	30	30	30				
Horses	AUM												
State Range													
Cows	AUM				15	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											76	38
Bulls	AUM											30	15
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)	Silage (lbs)	No. of Days
Replacement Heifers	20			105
Replacement Heifers		3		180
Cows	30			120
Bulls	36			75
Bulls	20		30	60
Horses	25			120

Table 4: Investment Summary.						CCB-CC4-21
	Total Value	Salvage/Cull Value	Livestock Share	Useful Life	Annual Taxes & Insurance	Annual Capital Recovery ¹
Buildings, Improvements and Equipment						
Fencing	74,000	0	100	25	266.40	\$5,254.00
Working Corrals & Pens	20,000	3,000	100	30	72.00	\$1,105.00
Barn	20,000	3,000	100	30	72.00	\$1,105.00
Hay Shed	30,000	5,000	100	40	108.00	\$1,475.00
Calving Shed	35,000	4,000	100	30	126.00	\$2,015.00
Water Developments	45,000	0	100	25	162.00	\$3,195.00
Range Improvements	40,000	0	100	10	144.00	\$5,200.00
Feed Wagon	2,000	500	100	10	7.20	\$195.00
Calf Table	1,500	500	100	10	5.40	\$130.00
Squeeze Chute	3,500	1,000	100	10	12.60	\$325.00
Vet Equipment	1,500	0	100	15	5.40	\$145.50
Stock Trailer	5,000	1,000	100	20	18.00	\$324.00
Gooseneck Trailer	12,000	4,000	100	20	43.20	\$648.00
Total	\$289,500				\$1,042.20	\$21,116.50
Purchased Livestock						
Horses	25,000	6,000	100	10		\$1,265.00 ²
Bulls	80,000	31,680	100	4		\$4,048.00 ²
Total	\$105,000					\$5,313.00
Retained Livestock						
Beef Replacement Heifers	114,000	106,400	100			\$5,768.40
Beef Cows	750,000	485,750	100			\$37,950.00
Total	\$864,000					\$43,718.40
Machinery and Vehicles						
Tractor Loader	40,000	8,500	100	18	144.00	\$2,709.00
Tractor 80 hp	35,000	7,000	100	18	126.00	\$2,408.00
Pickup 1/2 ton	12,000	2,500	100	6	43.20	\$1,871.50
Pickup 4X4 3/4 ton	20,000	5,000	100	5	188.00	\$3,465.00
Pickup 4X4 1 ton	25,000	4,000	100	8	235.00	\$3,255.00
Total	\$132,000				\$736.20	\$13,708.50

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, Joel Packham, Neil Rimbey, and Carmen Willmore.

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