UNIVERSITY OF CALIFORNIA AGRICULTURE AND NATURAL RESOURCES
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UC DAVIS DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS

SAMPLE COSTS FOR BEEF CATTLE

COW – CALF PRODUCTION

300 Head

NORTHERN SACRAMENTO VALLEY 2017

Larry C. Forero	UC Cooperative Extension Farm Advisor, Shasta County.
Roger Ingram	UC Cooperative Extension Farm Advisor, Placer and Nevada Counties.
Glenn A. Nader	UC Cooperative Extension Farm Advisor, Sutter/Yuba/Butte Counties.
Donald Stewart	Staff Research Associate, UC Agricultural Issues Center and Department of Agricultural and Resource Economics, UC Davis
Daniel A. Sumner	Director, UC Agricultural Issues Center, Costs and Returns Program, Professor, Department of Agricultural and Resource Economics, UC Davis

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STUDY CONTENTS

INTRODUCTION

The cattle industry in California has undergone dramatic changes in the last few decades. Ranchers have experienced increasing costs of production with a lack of corresponding increase in revenue. Issues such as international competition, and opportunities, new regulatory requirements, changing feed costs, changing consumer demand, economies of scale, and competing land uses all affect the economics of ranching. Rangeland makes up the largest share of agricultural acreage in the state-accounting for approximately 62 percent of the total land in farms (Census of Agriculture). Cattle operations play an important role in California's environment (16% of the total land area of California) and landscape. They need to be economically viable to maintain the current landscape.

Sample costs to raise beef calves from a cow-calf operation are presented in this study. This study is intended as a guide only. It can be used to guide production decisions, estimate potential revenue, prepare budgets and evaluate production loans. Sample costs for labor, materials, equipment, and custom services are based on April 2017 figures. A blank column titled Your Costs is provided in Tables 1 to enter your estimated costs.

For an explanation of calculations used in the study refer to the section titled Assumptions. For more information contact Donald Stewart; University of California Agriculture and Natural Resources, Agricultural Issues Center, Department of Agricultural and Resource Economics, at 530-752-4651 or destewart@ucdavis.edu. The local extension office can be contacted through; Larry Forero at 530-224-4900, lcforero@ucanr.edu.

Cost of Production studies for many commodities are available and can be down loaded from the website, http://coststudies.ucdavis.edu. Archived studies are also available on the website.

Costs and Returns Study Program/Acknowledgements. A costs and returns study is a compilation of specific crop data collected from meetings with professionals working in production agriculture from the area the study is

based. The authors thank rancher cooperators, UC Cooperative Extension, and other industry representatives who provided information, assistance, and expert advice. *The University is an affirmative action/equal opportunity employer*.

ASSUMPTIONS

The assumptions refer to Tables 1 through 4 and pertain to sample costs to operate a beef cow–calf operation. Practices described represent production practices and materials considered typical of a well-managed ranch in the region. This ranch has multiple production alternatives including a separate Yearling/Stocker operation. Some of the cost associated with ranching can be shared between the production alternatives and operations. A percentage of these costs are spread across the operations accordingly and noted in the narrative sections and tables.

This hypothetical operation explains the annual costs associated with an ongoing operation with the assumptions that the ranch was operated on this basis in prior years and will continue in subsequent years. The costs, materials, and practices shown in this study will not apply to all situations. Production practices vary by rancher and the differences can be significant. The study does not represent a single ranch and is intended as a guide only. **The use of trade names and ranching practices in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products or cultural practices.**

Overview. The cattle producer rents all range and pasture land. The farm is a "typical" owner-operated cow-calf ranch operation in the northern Sacramento Valley. Grazing requires 6 to 17 acres per cow-calf pair, depending upon the amount of forage available. Actual herd numbers in California vary widely, ranging from part-time operations of less than 10 cows to operations running thousands. This cost study is based upon numbers from a herd of 300 cows.

Ranching operations in California can be generally classified into four types. The first type can be described as a part-time operation that runs a small number of animals (less than 50) in order to utilize existing forage resources, keep the grass down, or on a hobby basis. The second type includes medium-sized operations (75-200 cows) that are run as a business, but the ranch is supplemented with revenue from other enterprises or from off-ranch sources. The third type includes large operations (over 200 cows) where cattle production is the primary enterprise and source of revenue for the ranch. The final category applies to cattle ranches of varying sizes that are part of a larger diversified operation with farming and other businesses. Often the ranches in the first and second categories are not profitable as an individual enterprise, while in categories three and four, the ranches are generally a profitable business enterprise, although they generally do not return a profit every year as cattle prices and weather varies.

The cost calculations are based on economic principles that include all cash costs plus non-cash overhead. This analysis uses the rental value of the Animal Unit Month, (AUM) as a cost of operation. An AUM is defined as the amount of forage it takes to feed one cow and her suckling calf for one month. This study assumes a mature cow weight of 1,200 pounds consuming about 2 percent of her body weight on a daily basis. Forage production per acre varies throughout California based on precipitation, elevation, soil type, range and pasture management, slope, aspect and more. Because they are built into rental costs, land taxes, fence and building depreciation, and land value are not considered in the costs.

Production Operations

Land/Pasture Rent, Hay and Supplements. All the rangeland and pasture is rented per AUM and one AUM is assumed to equal 1.2 acres. Rangeland in the northern end of the Sacramento Valley is valued between $1,000 and $1,500 per acre. Under these assumptions, one AUM costs $30. The quantity of forage for bulls and yearling heifers is calculated at 1.3 AUM & 0.7 AUM respectively. There is no pasture charge for the horses.

Rangeland in the northern end of the Sacramento Valley. Normally, pasture and rangeland are under multi-year lease agreements with the landowner. Mountain pasture is usually under a multi-lease with private landowners and the Bureau of Land Management. Mineral supplements and salt are provided to the animals year round. Livestock are fed stock quality alfalfa hay only over short periods of time when there is limited feed available on rangeland and during weaning and shipping. Winter range feeding is from November through April, and summer feeding on irrigated or mountain pasture is from May through October.

Table A. Operations Calendar. The Operations calendar is for a beef breeding herd which shows approximate dates for the operations. Operations will vary according to management and seasonal weather.

Months	Operation
Summer:	
May 1 to October 31	Cattle grazing - Summer Range-irrigated or mountain pasture
May	Heifer calves – booster vaccinations
May - Video Auction	Calves - (steers & heifers) sold
May	Trucking - hauling cattle to summer pasture
August	Pre-breeding vaccines - cows & heifers
September 1 to December 1	Calving
October & November	Semen check bulls (*Trich test)
Winter:	
November 1 to April 30	Cattle grazing - Winter Range
November	Yearling bulls purchased
November	Trucking - hauling cattle to winter pasture
December 1 to February 28	Breeding - bulls turned in
March	Open cows, open heifers and cull bulls sold
March	Brand inspection/check off
February & March	Veterinary/Medical-vaccinate, mark and brand calves

**Tritrichomonas foetus;* "Trich," is a venereal disease of cattle.

Health, Veterinary Services, Medicine. This service includes the value of vaccines, medicines, veterinary services, fertility testing, breeding fees, etc. Pre-breeding vaccinations are done in August, dry cow vaccinations and deworming in August. Steer and heifer calves are branded, dehorned, and vaccinated in March. The bull calves are also castrated in March. Heifer calves' booster vaccinations are given in May. It is assumed three-fourths of the costs occur in May and one-fourth equally split between the other three months. Many of the ranchers participating in the budget review no longer invest in pregnancy testing of their cows in an effort to reduce veterinary costs to the operation.

Horses/Dogs Care and Feed. Costs for replacement animals, shoeing horses, feed, and veterinary expenses are based on costs reported by the participating producers. Cattle dogs are for herding. Charges are for food, veterinary care and training. A percentage of the costs for the horses and dogs are included since they are used over the entire ranch.

Freight/Trucking-Transportation of Cattle. Trucking costs for commercial hauling of the cattle between summer and winter grazing are minimal for most operations. Each load can haul approximately 50,000 pounds (approximately 35 mature cows). The majority of operations in the study area utilize a 1-ton pickup with a 5th

wheel stock trailer for the bulk of their cattle transportation needs. This setup can haul 8 mature cows or 12,000 lbs. per load.

Vehicles. 1-Ton 5th-Wheel 4WD Pickup/5th-Wheel Stock Trailer/All-Terrain Vehicle (ATV). Business vehicle mileage for the pickup truck is estimated at 25,000 miles per year and calculated at $.535 per mile. The Stock trailer is estimated at 10,000 miles per year at $.20 per mile. Estimated mileage of the ATV 4-wheeler is 3,500 miles per year. Each vehicle is charged at 67 percent of the total. The costs are based on April 2017 prices.

Lube/Repairs – Vehicle/Equipment. Repair and maintenance charges for equipment are listed as a separate line item in tables 1 and 2.

Fencing Materials-Repairs & Maintenance. This would include the fencing wire, t-posts, purchases of wood and other construction materials and supplies.

Labor. This study does not include any wages for hired labor or costs associated with volunteer labor. Most ranches use little or no hired labor. Some ranches use volunteer help, especially on weekends for gathering cattle from individuals that supply their own horses. Some ranches hire cowboys to work the cows and some provide housing, tack, horse feeding and care.

Owner/Operator/Management. Returns to operator labor and management are included in net revenue. Assignment of Ranch Management costs differ by operation. Some ranches hire direct labor and some hire management that is paid a monthly salary. Owner/Operator labor for hauling, turnout, gathering, feeding, fence repair, irrigation, salting, checking cows, and moving pastures is not included as an explicit cost, but the value of management time and effort must be considered in assessing ranch profits.

Risk. Production and marketing risks are significant in the cattle business. This study makes every effort to model a production system based on typical, real world practices. However, it cannot fully represent financial and market risks, which affect the profitability and economic viability of cattle operations. Because there are so many potential risk factors, effective risk management must combine specific tactics in a detailed manner and in various combinations for a sustainable operation.

Revenue

Livestock. Livestock includes 300 bred cows and bred heifers, 60 yearling heifers from which replacement heifers will be selected, 15 bulls, and 3 horses. An 11 percent cull rate is applied to the cow herd. One percent of the cows (3 cows) die each year. The ranch has an 89 percent calf crop (267 calved) with 3 percent mortality before weaning (8 calves). Half of the 259 weaned calves are steers (130) and of the 129 heifers, 60 are retained as candidates for replacements. Based on these assumptions, the rancher sells 33 cull cows, 199 calves; (69 heifer calves and 130 steer calves). The rancher sells 24 yearling heifers, (keeping 36 yearling heifers for replacements), Table B.

There are 15 bulls included in inventory overhead. It is assumed that the producer will cull and sell 4 bulls per year. The bull sales and purchase transactions are included in the study. The cow to bull ratio is assumed to be 20:1, with each bull lasting an average of 4 years. Horses are purchased as needed. Inventory overhead includes three horses and two dogs, Table 4.

Marketing. Cull cows, open heifers and cull bulls are sold in March. Heifer calves and steer calves (6-8 months old) are sold via video or auction in May. Retained heifers not used for replacements are sold in

March. Marketing costs include video and/or auction fees, brand inspection and an assessment for beef promotion (Checkoff). Table B shows animal inventory by months.

Revenue/Sales. Returns are based on the Shasta Livestock Auction Yard mid-range sale prices per class. Estimates are based upon the average price differential between classes of livestock from Shasta Livestock-five sales each year 2010-2015. Sales and receipts by month are in Table 2.

Pricing/Ranging Analysis. Cattle prices vary with age, size and quality. Price per head usually increases with size while price per pound decreases with size. Prices for livestock purchased or carried over from a Cow-Calf operation for resale are dependent on the expected value of the animal at resale and the expected costs of holding the animal until resale including the operating costs. Table 3 shows a range of returns using a range of prices.

Table B. **Animal Inventory per Month.** This table shows one year of a multi-year operation that starts with 300 cows and bred heifers for the beginning of the breeding season in December. October and November shows that some of the calves, heifers & steers are born during those months. The heifer calves are called yearling heifers in June in which 60 are carried over as potential replacements. In March, 24 yearlings are sold, keeping 36 bred heifers. The calendar for February and March, (283 cows) is showing the loss of animals over winter. The pasture charges remain at 300 cows from September through March, Tables 1 & 2.

Animals	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Cows	264	264	264	300	300	300	300	300	283	283	264	264
Steer Calves	0	0	0	0	65	110	130	130	130	130	130	130
Heifer Calves	0	0	0	0	65	110	129	129	129	129	129	129
*Yearling Heifers	60	60	60	60	60	60	60	60	60	0	0	0
Bred Heifers	36	36	36	**0	0	0	0	0	0	36	36	36
Bulls	10	10	10	10	10	15	15	15	15	10	10	10

*Open yearling heifers are sold after pregnancy checking in March. The 36 bred yearling Heifers are kept as replacements.
**Bred heifers become cows after calving.

Note: The 36 bred heifers would be carried over from the previous year to have 300 bred cows and heifers in December. The reasoning for the months of June – August showing 96 yearlings and bred heifers.

Cash Overhead

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs can include property taxes, interest on operating capital, office expense, liability and property insurance, sanitation services, equipment repairs, and management.

Insurance. Insurance for farm investments varies depending on the assets included and the amount of coverage.

Liability Insurance. In this study, $4,000 is charged to the entire ranch as a standard farm liability insurance policy. This insurance will help cover the expenses for which you become legally obligated to pay for bodily injury claims on your property and damages to another person's property as a result of a covered accident. Common liability expenses covered under your policy include attorney fees and court costs, medical expenses for people injured on your property, injury or damage to another's property caused by your animals. The Cow-Calf study is charged at 67 percent of the total cost. The remaining insurance costs are charged to the Yearling/Stocker operation.

Livestock Insurance. No amount of livestock insurance is specified as the most common way to cover livestock is to insure them as a herd. Livestock (cows, swine, goats, lambs and sheep) and poultry (chickens and turkeys) coverages can vary widely among farm insurance companies. It's important to understand what is covered in your farm insurance policy and what is not. Insurance packages provide broad causes of loss protection for livestock, which includes the following: accidental shooting, attacks by dogs or wild animals (does not apply to sheep), earthquake loss, electrocution, flood loss, loading and unloading accidents, and sudden and accidental collision damage causing death. Individual policies and blanket policies are available to cover all of your farm property (livestock, equipment, structures, etc.) in one lump sum amount.

Fire Insurance. No amount of fire insurance is specified. Some operations opt to purchase fire insurance for high-risk rangeland, such as areas near busy roads or areas prone to burn frequently.

USDA Insurance Programs. The USDA, through the Risk Management Agency and the Farm Services Agency, offers a number of insurance programs to livestock producers. Livestock Risk Protection (LRP) policy offers protection against a decline in feeder cattle prices during the term of the endorsement. Non-insured Crop Disaster Assistance Program (NAP) provides payments to producers based on percent forage loss over 50 percent and number of acres insured. Other insurance programs are offered through federal assistance programs. There are limitations and application deadlines that apply to all programs. This study assumes no participation in government insurance programs.

Office Expense. Office and business expenses are estimated at $4,000 per year for the entire ranch and charged at 67 percent of the total to the Cow-Calf operation. The other 33 percent is charged to the Yearling/Stocker operation. These expenses include office supplies, social media, bookkeeping, accounting, permits and miscellaneous administrative charges.

Interest on Operating Capital. Interest on operating capital is based on cash operating costs and is calculated monthly until sale months at a nominal rate of 6.0 percent per year.

Interest charge is the cost of your money that is tied up in the cattle production. It reflects the amount of money you pay on borrowed money (Line of Credit) or that amount you could have earned had you invested your own resources in alternative uses. The interest cost of post animal sales is discounted back to the last sale month using a negative interest charge. The interest rate will vary depending upon various factors, the rate in this study is considered a typical lending rate by a farm lending agency as of April 2017. As revenue is received from animal sales it is used to pay back the operating loan, Table 2.

Non-Cash Overhead

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments.

Capital Recovery Costs. Capital recovery cost is the annual depreciation and interest costs for a capital investment. This includes equipment, machinery and livestock. It is the amount of money required each year to recover the difference between the purchase prices and salvage value (unrecovered capital). It is equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is: ((Purchase Price – Salvage Value) x Capital Recovery Factor) + (Salvage Value x Interest Rate).

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements), the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The purchase price and salvage value for equipment and investments are shown in Table 4.

Capital Recovery Factor. Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate used and the life of the machine.

Interest Rate. The interest rate of 5.0 percent used to calculate capital recovery cost is the effective long term interest rate effective April 2017. The interest rate is provided by a local farm lending business and will vary according to risk and amount of loan.

Shop & Fencing Tools. There is no set inventory for these replacement shop and fencing tools. It would include hand tools, gloves, chainsaw and portable welder.

Portable Cattle Working Facilities. Facilities consist of portable loading chutes and portable corral panels. Depending upon the type and number of squeeze chutes and corral panels, the price will vary. An estimated price for livestock handling equipment required by a typical 300-cow operation is used in this study.

Equipment. Annual ownership costs for equipment and other investments are shown in Table 4, Equipment, Investment, and Business Overhead and are listed as Capital Recovery. A percentage of these charges are allocated across the Cow-Calf operation. The remaining costs are spread across the Yearling/Stocker production alternatives accordingly.

Tack. This category includes three saddles and related necessary equipment (blanket, headgear, lariat, etc.).

Table Values. Due to rounding, the totals may be slightly different from the sum of the components.

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Table 1. COSTS AND RETURNS FOR BEEF COW - CALF PRODUCTION

300 Head Operation Sacramento Valley-2017

Table 1. General ranch operating costs and returns estimates are listed in this table. This table does not account for payments, outside of the annual interest on an operating loan.

Production/Sales:	**Head**		**Units/Head**	**Unit**	**Price/Unit**	**Total Value**	***Value/Head**	**Your Costs**
Steer Calves	130		7.00	cwt	146.97	133,743	445.81	
Heifer Calves	69		6.40	cwt	137.00	60,499	201.66	
Yearling Heifers	24		8.60	cwt	127.45	26,306	87.69	
Cull Cows	33		12.50	cwt	69.36	28,611	95.37	
Cull Bulls	4		18.00	cwt	80.16	5,772	19.24	
GROSS Revenue:						**254,930**	**849.77**	
Operating Inputs:	**Units**		**Units**		**Cost/Unit**	**Total Costs**	***Cost/Cow**	
Supplements	7.50	tons	1	year	900.00	6,750	22.50	
Alfalfa Hay	60	tons	1	year	160.00	9,600	32.00	
Salt Supplement	6.00	tons	1	year	240.00	1,440	4.80	
Pasture-Winter (cows@ 1.2/AUM)	300	cows	7	months	30.00	63,000	210.00	
Pasture-Summer (cows@ 1.2/AUM)	264	cows	5	months	30.00	39,600	132.00	
Pasture-Winter (yearling heifers @ 0.7/AUM)	60	heifers	6	months	21.00	7,560	25.20	
Pasture-Summer (bred heifers @ 0.7/AUM)	36	heifers	3	months	21.00	2,268	7.56	
Pasture-Summer (all heifers @ 0.7/AUM)	96	heifers	3	months	21.00	6,048	20.16	
Pasture-Summer (Bulls @ 1.3/AUM)	10	bulls	8	months	39.00	3,120	10.40	
Pasture-Winter (Bulls @ 1.3/AUM)	15	bulls	4	months	39.00	2,340	7.80	
Vaccine/Wormer/Etc.-cows	267	cows	1	each	9.00	2,403	8.01	
Vaccine/Wormer/Etc.-Heifers	60	heifers	1	each	12.50	750	2.50	
Vaccine/Wormer/Etc.-bulls	15	bulls	1	each	15.50	233	0.78	
Veterinary Service-cows	267	cows	1	each	2.25	601	2.00	
Veterinary Service -heifers	60	heifers	1	each	7.25	435	1.45	
Veterinary Service-bulls	15	bulls	1	each	40.00	600	2.00	
Brand Inspection	267	cows	1	inspection	1.25	334	1.11	
Marketing Order Promo (checkoff)	267	cows	1	checkoff	1.00	267	0.89	
Freight/trucking	300	cows	300	head	20.00	6,000	20.00	
Marketing-Video/Auction Fees	267	cows	1	each	35.00	9,345	31.15	
Horse (Feed, Shoes, Vet)	2	horses	1	each	3,015.00	6,030	20.10	
Dogs (Food, Training, Vet)	1	dogs	1	each	500.00	500	1.67	
Yearling Bulls Purchased	4	bulls	1	each	6,000.00	24,000	80.00	
Pickup Truck 1-Ton 5th Wheel	1	pickup	16,750	miles	0.54	8,961	29.87	
Stock Trailer	1	trailer	6,700	miles	0.20	1,340	4.47	
ATV	1	ATV	2,345	miles	0.35	821	2.74	
Fencing Materials-Maint/Repair			1	each	5,000.00	5,000	16.67	
Equipment (repair)			1	year	2,000.00	2,000	6.67	
Operating Costs:						**211,345**	**704.48**	
Interest on Operating Capital @ 6.0%						4,691	15.64	
Total Operating Costs:						**216,036**	**720.12**	
Cash Overhead Costs:								
Liability Insurance						2,680	8.93	
Office Expenses						2,680	8.93	
Total Cash Overhead:						**5,360**	**17.87**	
Total Cash Costs:						**221,396**	**737.99**	
Revenue Above Cash Costs:						**33,534**	**111.78**	
**Annual Capital Recovery	(Table 4)					45,234	150.78	
Total Costs:						**266,630**	**888.77**	
Revenue Above Total Costs:						**-11,700**	**-39.00**	

*Value/Head and Cost/Cow are based on 300 cows.

** Capital Recovery costs are allocated between different production operations on the ranch and charged at 67% of the total.

Table 2. MONTHLY COSTS FOR BEEF COW-CALF PRODUCTION

300 Head Operation Sacramento Valley-2017

Table 2. Operating costs and returns from Table 1 are listed monthly, by line item.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Production/Sales:													
Steer Calves	0	0	0	0	0	0	0	0	0	0	0	133,743	133,743
Heifer Calves	0	0	0	0	0	0	0	0	0	0	0	60,499	60,499
Yearling Heifers	0	0	0	0	0	0	0	0	0	26,306	0	0	26,306
Cull Cows	0	0	0	0	0	0	0	0	0	28,611	0	0	28,611
Cull Bulls	0	0	0	0	0	0	0	0	0	5,772	0	0	5,772
GROSS Revenue:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**60,689**	**0**	**194,242**	**254,930**
Operating Inputs:													
Supplements (Combined)	683	683	683	683	683	683	683	683	683	683	683	683	8,190
Alfalfa Hay	0	0	0	1,600	1,600	1,600	1,600	1,600	1,600	0	0	0	9,600
Pasture (Cows@ 1.2/AUM)	7,920	7,920	7,920	9,000	9,000	9,000	9,000	9,000	9,000	9,000	7,920	7,920	102,600
Pasture (Heifers @ 0.7/AUM)	2,016	2,016	2,016	1,260	1,260	1,260	1,260	1,260	1,260	756	756	756	15,876
Pasture (Bulls @ 1.3/AUM)	390	390	390	390	390	585	585	585	585	390	390	390	5,460
Veterinary Medicine (All Costs)	0	0	314	0	0	314	314	0	0	314	0	3,765	5,021
Brand Inspection	0	0	0	42	0	0	0	0	0	42	0	251	334
Marketing Order Promo (Checkoff)	0	0	0	33	0	0	0	0	0	33	0	200	267
Freight/trucking	0	0	0	1,500	0	1,500	0	0	0	1,500	0	1,500	6,000
Marketing-Video or Auction Fees	0	0	0	0	0	0	0	0	0	0	0	9,345	9,345
Horse (Feed, Shoes, Vet)	503	503	503	503	503	503	503	503	503	503	503	503	6,030
Dogs (Food, Training, Vet)	42	42	42	42	42	42	42	42	42	42	42	42	500
Yearling Bulls Purchased	0	0	0	0	0	24,000	0	0	0	0	0	0	24,000
Fencing Materials-Repair/Maint.	417	417	417	417	417	417	417	417	417	417	417	417	5,000
Vehicles/Trailer (Fuel, Lube, Repair)	927	927	927	927	927	927	927	927	927	927	927	927	11,122
Equipment (Repair)	167	167	167	167	167	167	167	167	167	167	167	167	2,000
Operating Costs:	**13,063**	**13,063**	**13,377**	**16,562**	**14,987**	**40,996**	**15,496**	**15,182**	**15,182**	**14,772**	**11,803**	**26,864**	**211,345**
Net Revenue above Op. Costs (Cumulative)	-13,063	-26,126	-39,502	-56,064	-71,051	-112,047	-127,543	-142,725	-157,907	-111,990	-123,793	43,585	43,585
Interest on Operating Capital @ 6.0%	65	131	198	280	355	560	638	714	790	560	619	-218	4,691
Total Operating Costs:	**13,128**	**13,193**	**13,574**	**16,842**	**15,342**	**41,556**	**16,134**	**15,895**	**15,971**	**15,332**	**12,422**	**26,646**	**216,036**
Net Revenue above Operating Costs:													**38,894**

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Table 3. RANGING ANALYSIS FOR BEEF COW-CALF PRODUCTION

300 Head Operation Sacramento Valley-2017

Production/Sales	Total Head	Weight cwt	ˣMarket Prices ($ per cwt)						
Steer Calves	130	7.00	120.00	130.00	140.00	150.00	160.00	170.00	180.00
Heifer Calves	69	6.40	121.20	131.30	141.40	151.50	161.60	171.70	181.80
Yearling Heifers	24	8.60	104.40	113.10	121.80	130.50	139.20	147.90	156.60
Cull Cows	33	12.50	56.40	61.10	65.80	70.50	75.20	79.90	84.60
Cull Bulls	4	18.00	66.00	71.50	77.00	82.50	88.00	93.50	99.00
GROSS Revenue			212,287	229,978	247,668	265,359	283,049	300,740	318,431
†Total Operating Costs			216,036	216,036	216,036	216,036	216,036	216,036	216,036
Net Revenue			-3,749	13,942	31,632	49,323	67,013	84,704	102,395
Net Revenue per Head	**300**		**-12.50**	**46.47**	**105.44**	**164.41**	**223.38**	**282.35**	**341.32**

ˣ Estimate based upon average price differential between classes of livestock from Shasta Livestock-five sales each year 2010-2015.

†Total operating costs based on 2016-2017 data, Table 2.

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Table 4. EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD
300 Head Operation Sacramento Valley-2017

†OVERHEAD	Purchase Price	Salvage/Cull Value	Livestock Share (%)	Useful Life (yr.)	Annual Taxes and Insurance	*Annual Capital Recovery
BUILDINGS, IMPROVEMENTS AND EQUIPMENT						
Squeeze/Loading Chute & Corral Panels	17,000	1,190	100	15	0	1,582
Shop/Fencing Tools	3,850	270	100	20	0	301
Saddles (3)/Tack	11,400	798	100	10	0	1,413
TOTAL BUILDINGS, IMPROVEMENTS AND EQUIPMENT	**32,250**	**2,258**			**0**	**3,295**
LIVESTOCK INVENTORY						
Bulls (15)	90,000	21,645	100	4	0	20,358
Cows Bred (300)	360,000	260,100	100	8	0	28,460
Yearling Heifers (60)	85,500	90,480	100	0.7	0	4,381
Horses (3)	9,000	0	100	8	0	1,392
Dogs (2)	1,000	0	100	7	0	173
TOTAL LIVESTOCK INVENTORY	**545,500**	**372,225**			**0**	**54,764**
MACHINERY AND VEHICLES						
ATV	8,500	2,125	100	8	63	1,092
Stock Trailer-5th Wheel	16,000	1,120	100	10	93	1,983
Pickup 1-Ton 4X4 5th Wheel	60,000	17,500	100	10	2,100	6,379
TOTAL MACHINERY AND VEHICLES	**84,500**	**20,745**			**2,256**	**9,454**
TOTAL OVERHEAD	**662,250**	**395,228**			**2,256**	**67,513**

*This table accounts for all equipment, investment, overhead, and depreciation costs. Total overhead costs from this table are shown as Annual Capital Recovery at 67% of the total in Table 1. The charges are allocated between the different operations on the ranch. The remaining 33% is charged to the yearling/stocker operation.

†The interest rate for capital recovery is calculated at 5%.

The costs of insurance on the cattle is not included in this study.