Improving Range and Livestock Management Mitigates Effects of Cattle Price Crisis

Michael H. Ralphs, Norris J. Stenquist, and Frank E. Busby

Conditions in the cattle industry between 1973 and 1976 placed the rancher in the proverbial position between a "rock and a hard spot." An accelerating increase in operating costs combined with the drastic fall in cattle prices caused a severe cost-price squeeze. Production costs of Utah farms and ranches increased 84% between 1970 and 1976. Over this same period, calf prices fluctuated dramatically and fell from a high of $58/cwt in 1973 to a low of $26/cwt in 1975.

Since ranchers have little or no control over the prices they receive, another avenue of survival is to increase the productivity of the operation. If the potential exists for developing the range, pasture, and crop resources, the scale of operation can be increased to further increase net income.

A case study was conducted on the Stewart Hopkin Ranch in northern Utah. A performance testing program was implemented in 1970 and provided an evaluation of beef production in relation to extensive range improvements and livestock husbandry practices that were implemented between 1970 and 1976. The analysis shows the financial dilemma experienced by most cattlemen and identifies means of coping with the situation.

Description of Ranch

The ranch was a commercial Hereford-Angus cow-calf operation. The homestead included 746 acres of native meadow hay and 726 acres of crested wheatgrass pasture. One crop of hay was harvested and the regrowth grazed by the breeding herd in the fall and early winter. Cattle remained on the meadows and were fed native hay throughout the winter. They were moved to crested wheatgrass pastures in the spring where breeding began about mid May. Around the first of June, the cattle were trailed to the 7,120-acre private summer mountain range. Calves were weaned shortly after the fall roundup and, depending on cattle prices, either sold or fed until early spring. Replacement heifers were selected for their size and conformation as well as their performance. All cows and yearling replacement heifers were pregnancy tested and those found open were culled. A stringent health program was maintained throughout the year.

Problems

The carrying capacity of the mountain summer range was the bottleneck that limited expansion of the operation. Cattle concentrated in the valley bottoms and accessible benches, and heavily overgrazed these areas. The less accessible side hills and higher elevations received little use and remained in good condition. The uneven utilization limited the number of cows that could be grazed and aggravated the condition of the heavily used areas.

Improvements

A four-pasture rest rotation grazing system was implemented in 1970 on the mountain summer range. The system was modified to three pastures in 1974 to facilitate cattle movement, reduce stress, and improve the size ratio of the pastures. One pasture was grazed heavily until seed set, then gates were opened and cattle were allowed to drift into the second pasture. Round-up and herding was minimized. The third pasture was completely rested. This sequence of use was systematically rotated each year. Thirty miles of stock trails were dozed or improved to provide access to all parts of the range. Springs were developed, pipelines and water troughs were constructed and ponds built to provide dependable water in all areas of the pastures. Nine hundred acres of big sagebrush (Artemisia tridentata) were sprayed and treatment of an additional 100 acres is planned for the future.

Crested wheatgrass is an excellent source of spring forage but is difficult to maintain in northeastern Utah due to the cold open winter and dry spring. A grazing sequence was implemented in which half of the crested wheatgrass pastures were rested every year in an effort to restore vigor, allow for carbohydrate storage, and accumulate a season's growth.

The meadow hayland was developed by seeding with improved varieties of grass and grass alfalfa mixtures and fertilizing with 300 lb of ammonium nitrate. Yields increased from 1 ton/acre to 2 1/2 ton/acre.

A winter supplement program was implemented to maintain body condition and increase conception rates and fertility of the herd.

Results

The range condition improved over the 7-year period. The species composition changed from predominantly sagebrush to a mixture of grasses and forbs. The trend is up and the ecological succession is progressing to a higher condition under the present management strategy. The grazing system concentrated the entire herd in one pasture for half of the season and forced the cows out of the bottoms. The access trails, stock water and salting practices kept the cattle uniformly dispersed throughout the pasture. The brush control and resultant increase in forage production, and the improved distribution and utilization, allowed a 28% increase in stocking rate on the summer range. Additional summer pasture was leased to accommodate the further increase in numbers. This, along with development of the meadow hayland and crested wheatgrass pastures, permitted an increase in total cattle numbers from 421 to 600 head. Breeding cows increased from 336 to 483 head (Table 1).

The percentage of cows calving increased from 93% in 1970 to 98% in 1976. The winter supplementation of the herd, along with control of reproductive diseases, and stringent
culling practices contributed to the high fertility of the herd and an increase in calving rate.

The percent of neonatal losses decreased, thus reflecting the improvement in management along with the increased number of cows. The percent calf crop weaned increased from 86% in 1970 to 93% in 1976.

There was a considerable fluctuation of average weaning weights, ranging from 345 lb to 380 lb. The total pounds weaned increased 63% (Table 1). This total production can be broken down further to identify the sources of the increase. The increase in cow numbers alone, had there been no improvement in calf drop or weaning weights, would have increased total pounds of calf weaned 44%. The increase attributed to calf crop (from 86 to 93%) would have increased total production another 11% and that attributed to weaning weights would have increased production the additional 8%.

Table 1. Yearly production figures.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cow number</th>
<th>Percent cows calved</th>
<th>Calf crop</th>
<th>Average weaning weights</th>
<th>Total pounds calf weaned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>336</td>
<td>93</td>
<td>86</td>
<td>347</td>
<td>100,269</td>
</tr>
<tr>
<td>1971</td>
<td>371</td>
<td>95</td>
<td>89</td>
<td>348</td>
<td>114,906</td>
</tr>
<tr>
<td>1972</td>
<td>384</td>
<td>89</td>
<td>84</td>
<td>366</td>
<td>118,057</td>
</tr>
<tr>
<td>1973</td>
<td>396</td>
<td>99</td>
<td>94</td>
<td>358</td>
<td>133,262</td>
</tr>
<tr>
<td>1974</td>
<td>420</td>
<td>95</td>
<td>90</td>
<td>345</td>
<td>130,410</td>
</tr>
<tr>
<td>1975</td>
<td>490</td>
<td>98</td>
<td>90</td>
<td>380</td>
<td>167,580</td>
</tr>
<tr>
<td>1976</td>
<td>483</td>
<td>98</td>
<td>93</td>
<td>363</td>
<td>163,056</td>
</tr>
</tbody>
</table>

Economic Analysis

Indexes of average production costs of Utah farms and ranches, and prices paid by farmers, show that statewide and nationwide production costs have increased 84% and 81%, respectively, between 1970 and 1976. Operating costs for this ranch (cash cost plus depreciation) increased 96% between 1970 and 1976. However, the cost per cow increased from $107 to $146 or only 36%. The cost per pound of calf weaned increased from $.36/lb to $.44/lb or only 22%. These efficiencies clearly indicate that the owner reduced per unit cost by increasing the productivity of the operation and spreading the fixed costs over a larger production base.

The gross returns were estimated as if all calves, except replacement heifers, were sold at weaning. In addition, 15% of the brood cows and 25% of the bulls were included in the yearly sales. Actual October prices for each class of cattle were used to calculate returns each year. The net returns (gross returns—operating costs) for 1970 were $2,106 and for 1976, a net loss of $3,671.

A comparison of the returns if the improvements had not been made, provided an indication of the profitability of development. If the 1970 base level production had been maintained and the production costs continued to rise at the national rate, the estimated profits would have been less and the losses greater than were actually received. The net profit in 1970 was the same, $2,106. In 1973 when prices were highest, net return from base production was only $16,132 compared to $30,886 actual returns. Prices had dropped substantially in 1976, giving a $24,718 net loss from the base level production compared to an actual loss of only $3,671.

The short-run goal for many ranchers was survival during the segment of the cattle cycle covered in this study. As the cattle industry approaches the beginning of herd buildup in the oncoming cycle, a couple of points from this study could help cattlemen increase their returns while cattle prices are high and minimize their loss when prices drop. Development of the range and forage resources is the key to increased beef production and efficient operation of a ranch. Early spring pastures with season’s old growth provide top quality diet to turn out onto the spring. A grazing system on lower condition native range improves the condition of the range while providing more forage for the cattle. Hay meadows can be improved and fertilization can further increase yields. Keen management can increase the quantity as well as the quality of forage on a ranch and thus increase the total number, as well as productivity per cow. This will put a rancher in a better position to weather the fluctuations in the cattle market.

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