



# FARM Assistance



*Agri*LIFE EXTENSION  
Texas A&M System

## Long-Term Financial Impacts of Cattle and Wildlife Management Strategies in South Texas

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**FARM Assistance Focus 2008-1**

**January 2008**

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**W**ildlife is becoming the principal, as opposed to a supplemental, enterprise in many ranches. Forage and brush control considerations for wildlife habitat have also become integral management issues for some ranch operations. This study illustrates the financial implications of alternative management strategies targeted toward optimizing wildlife habitat and the profitability of ranching/hunting operations.

Over the past 25 years, wildlife management growth has resulted from major metropolitan deer and bird hunting enthusiasts owning or leasing ranches. In addition, many land owners and cattle producers have reduced or eliminated their cattle herds to concentrate more and more on hunting recreation or lease opportunities over the past decade. However, completely eliminating the livestock enterprise could be going one step too far. Range management experts emphasize the need to maintain grazing at adequate livestock stocking rates to help manage proper forage and brush conditions for wildlife. Mechanical and/or chemical brush control can also be used to manage and enhance native wildlife habitat. If done properly, livestock grazing can be an income producing habitat management strategy.

Ranchers in South Texas have three basic livestock enterprise options available, including cow-calf, stockers or a mix of the two. All three options have benefits and consequences which may not fully be recognized in the short term. However, a mix of cow-calf and stockers is not a common practice in the South Texas area. The long-term implications of each option make management analysis and decisions difficult, particularly when cattle prices are expected to cyclically decline over the next few years.

## Assumptions

The Financial And Risk Management (FARM) Assistance strategic planning model was used to evaluate and illustrate the individual financial impacts of various management strategies on a model South Texas Ranch. Four scenarios were assumed: 1) a 200 head cow-calf

operation (1 animal unit to 10 acre stocking rate) plus hunting income, 2) a 100 head cow-calf operation (1 animal unit to 20 acre stocking rate) plus hunting income, 3) hunting only with no cattle, and 4) hunting with stocker leasing income (250 head stockers grazed March-August). The ranch is assumed to be 2,000 acres and the basic assumptions and characteristics are given in Table 1. Production inputs, yields, costs, estimates for overhead charges, and hunting and stocker lease rates were based on typical rates for the region. It was assumed that hunting income was based on three-year leases with rate appreciation each renewal. Hunting income is higher (\$10/acre compared to \$7/acre) in scenarios 3 and 4, reflecting the fact that the hunter would have sole use of the ranch during prime hunting seasons. Stocker grazing rates were held constant for the 10-year planning horizon, reflecting a stable lease history in the area. The assets, debts, machinery inventory, and

Table 1: Representative South Texas Ranch Assumptions

Selected Parameter	Scenarios			
	1- Hunting & Cow-Calf (200 Cows) <sup>1</sup>	2- Hunting & Cow-Calf (100 Cows) <sup>2</sup>	3-Hunting Only	4-Hunting & Stockers
Operator Off-Farm Income	\$24,000/year	Same	Same	Same
Spouse Off-Farm Income	\$35,000/year	Same	Same	Same
Family Living Expense	\$30,000/year	Same	Same	Same
Ownership Tenure	100%	Same	Same	Same
Royalty Income	None	Same	Same	Same
Stocker Leasing Income/Year (March-August)	N/A	N/A	N/A	\$8/hd/mo.
Hunting Income/Acre/Year	\$7	\$7	\$10	\$10
Deer Stands, Feeders, Feed, etc.	Hunters Provide	Same	Same	Same
Herbicide Costs/Acre	\$1.50	\$3	\$4	\$1.50
Herd Size	200 cows, 8 bulls	100 cows, 4 bulls	N/A	250 head
Calf Weaning Rate	85%	Same	N/A	N/A
Cow Herd Replacement	Bred cows	Same	N/A	N/A
Salt/Mineral blocks/Year	\$15/cow	Same	N/A	\$10.50/hd
Hay Fed/Cow/Year	1.5 tons	1.0 tons	N/A	N/A
Protein Cubes Fed/Cow/Year	150 lbs.	100 lbs.	N/A	N/A
Cow Culling Rate/Year	7.50%	Same	N/A	N/A
Steer Weaning Weights	525 lbs.	Same	N/A	N/A
Heifer Weaning Weights	475 lbs.	Same	N/A	N/A
Steer Prices	\$1.20/lb. in 2007	Same	N/A	N/A
Heifer Prices	\$1.10/lb. in 2007	Same	N/A	N/A
Cull Cow Prices	\$.50/lb. in 2007	Same	N/A	N/A
Cull Bull Prices	\$.60/lb. in 2007	Same	N/A	N/A
Bred Cow Prices	\$1,100/head	Same	N/A	N/A
Replacement Bull Prices	\$2,000/head	Same	N/A	N/A
Hay Prices	\$100/ton in 2007	Same	N/A	N/A
Range Cube Prices	\$.142/lb.	Same	N/A	N/A

<sup>1</sup> One animal unit to 10 acres stocking rate. <sup>2</sup> One animal unit to 20 acres stocking rate.

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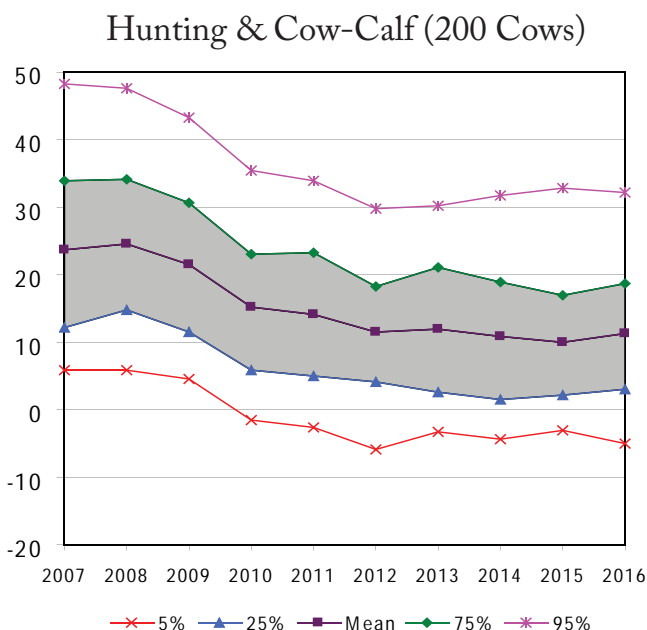
scheduled equipment replacements for the projection period were the same in the two cow-calf scenarios. In the hunting only and hunting with stockers scenarios, no cattle or hay trailers were included. Moreover, the hunting with stockers scenario assumed the grass was leased out with no cattle ownership. It is assumed the ranch has only intermediate term debt in all scenarios. Initial, local cattle prices were obtained from the Live Oak Livestock Commission Company auction report in Three Rivers, Texas, for September 10, 2007.

The base year for the 10-year analysis of the representative ranch is 2007 and projections are carried through 2016. Commodity and livestock price trends follow projections provided by the Food and Agricultural Policy Research Institute (FAPRI, University of Missouri) with costs adjusted for inflation over the planning horizon. Representative measures, including profitability, liquidity and solvency, were chosen to assess the financial implications of each scenario. Each measure provides information with respect to the projected variability in the ranches financial position and performance. When taken as a whole, the analysis provides insight into the risk and return expectations of the ranch throughout the planning horizon under each management strategy.

**Results**

A comprehensive financial projection, including price and weaning

Figure 1. Projected Variability in Net Cash Farm Income for Hunting & Cow-Calf (1 A.U. to 10 Ac. Stocking Rate) Scenario.



weight risk for the two cow-calf scenarios, is illustrated in Table 2 and Figure 1. Table 2 presents the average outcomes for selected financial projections, while the graphical presentation illustrate the range of possibilities for the selected variable. Total cash receipts averaged \$113,250 over the 10-year period for scenario 1 (cow-calf, 1-10 stocking rate), which is significantly more than the other three scenarios. Average cash costs were \$97,740 for scenario 1. Variations in cash costs for the four scenarios largely reflect differences in operating costs such as labor, herbicides, feed and cattle purchased, and other production costs.

Profitability, which measures the extent to which a farm or ranch generates income from the use of its resources, is expected to be the lowest over the ten-year planning horizon in scenario 3 (hunting only). Net cash farm income (NCFI) is projected to be -\$12,470 in 2007, compared to positive NCFI in the two cow-calf scenarios and -\$100 in the hunting with stockers scenario (Table 2 and Figure 1). For 2007-2016, NCFI is expected to average -\$12,850 in scenario 3, \$15,510 for scenario 1, -\$1,580 for scenario 2 (cow-calf, 1-20 stocking rate), and -\$920 for scenario 4 (hunting with stockers). Over the 10-year period, cash receipts in all four scenarios will generally decline along with projected cattle prices, while operating expenses trend upward with inflation (Figure 1). Figure 1 illustrates the risk in NCFI in scenario 1, with the range indicating profit levels from approximately -\$6,000 to \$48,000 in scenario 1 are possible. This range suggests that there is significant risk of operating losses over the projected period. The shaded area of the graph suggests that the operation is expected to have a 50% chance of realizing a \$1,000 to \$34,000 profit level in scenario 1.

Liquidity measures the ability of a farm or ranch to meet its short-term financial obligations without disrupting the normal operations of the business. The liquidity of the operation may be measured by the ending cash balance (Table 2). In all four scenarios, no cash flow problems are expected as cash reserves are projected to grow over the planning horizon. The growth in cash reserves is largely dependent on off-farm income, which is common for a typical ranch. Growth in cash reserves in scenario 1 is projected to be 36.2% more than scenario 2, 126% more than scenario 3 and 46.9% more than scenario 4.

Solvency is a comparison of the value of owned assets to the amount of debts owed, and real net worth is a measure of the owner's interest or equity adjusted for inflation. Growth in cash reserves and real estate assets translates into a projected increase in real net worth

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in all scenarios. However, in scenario 1, real net worth reaches \$2,554,940, which is 5.7% more than scenario 2, 12.8% more than scenario 3, and 9.3% more than scenario 4 (Table 2).

### Implications

Currently, there is a tendency to charge all ranch expenses to the cattle operation making the wildlife operation look extremely profitable. Whether this tendency is carried out on paper or simply the perception of the rancher, it can lead to ill-informed decisions to shift the hunting/livestock enterprise mix. When expenses are allocated fairly across all enterprises and the ranching operation is analyzed as a whole unit, it is obvious that a single enterprise is less likely to stand on its own.

Wildlife management will continue to add to the bottom line of a

South Texas ranch and be an integral part of overall operations. Nevertheless, results show that cattle enterprises will likely continue to contribute most significantly to financial well-being of the typical ranching business. The projected results of this study also depict that utilizing cattle to manage forage and brush conditions is a preferable alternative for ensuring business profitability and financial condition. The type of cattle operation and stocking rates will be dependent on location, forage and weather conditions and management preference or business limitations. For example, stocker operations may be attractive to some since the cattle are only on the ranch part of the year and can be gone during the hunting season. Ranch managers can still attain the objectives of excess grass removal, stimulation of forbs, and general habitat improvement. Stockers provide flexibility in that the ranch can easily be de-stocked in case of drought or fully stocked in case of excess forage.

Scenarios	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Avg.
<b>Total Cash Receipts (\$1,000)</b>											
1-Hunting Cow-Calf (200 Cows) <sup>1</sup>	121.55	123.05	118.71	112.75	109.95	108.34	109.46	108.91	108.84	110.98	113.25
2-Hunting Cow-Calf (100 Cows) <sup>2</sup>	68.06	68.82	66.64	64.18	62.72	61.92	63.01	62.69	62.68	64.26	64.50
3-Hunting Only	20.00	20.00	20.00	21.40	21.40	21.40	22.80	22.80	22.80	24.20	21.68
4-Hunting & Stockers	32.00	32.00	31.98	33.38	33.41	33.42	34.81	34.78	34.82	36.22	33.68
<b>Total Cash Costs (\$1,000)</b>											
1-Hunting Cow-Calf (200 Cows) <sup>1</sup>	97.86	98.53	97.13	97.47	95.79	96.76	97.50	98.07	98.74	99.60	97.74
2-Hunting Cow-Calf (100 Cows) <sup>2</sup>	61.07	61.56	61.66	62.20	61.68	62.72	63.45	64.15	64.94	65.75	62.92
3-Hunting Only	32.47	32.67	33.43	33.79	34.00	34.82	35.24	35.74	36.32	36.80	34.53
4-Hunting & Stockers	32.10	32.30	33.18	33.63	33.99	34.96	35.52	36.15	36.82	37.39	34.60
<b>Net Cash Farm Income (\$1,000)</b>											
1-Hunting Cow-Calf (200 Cows) <sup>1</sup>	23.69	24.52	21.57	15.28	14.16	11.58	11.96	10.84	10.10	11.38	15.51
2-Hunting Cow-Calf (100 Cows) <sup>2</sup>	6.99	7.26	4.98	1.97	1.04	-0.81	-0.44	-1.47	-2.27	-1.49	-1.58
3-Hunting Only	-12.47	-12.67	-13.43	-12.39	-12.60	-13.42	-12.44	-12.94	-13.52	-12.60	-12.85
4-Hunting & Stockers	-0.10	-0.30	-1.20	-0.25	-0.59	-1.53	-0.71	-1.37	-2.00	-1.17	-0.92
<b>Ending Cash Reserves (\$1,000)</b>											
1-Hunting Cow-Calf (200 Cows) <sup>1</sup>	47.40	82.42	116.63	147.69	185.84	221.01	257.40	293.95	330.99	373.69	
2-Hunting Cow-Calf (100 Cows) <sup>2</sup>	36.46	60.67	83.91	105.70	133.66	159.25	186.35	213.68	241.50	274.30	
3-Hunting Only	20.58	30.67	40.85	52.71	70.17	85.97	103.99	122.48	141.64	165.37	
4-Hunting & Stockers	31.10	49.92	68.83	89.47	115.86	140.49	167.07	194.08	221.71	254.47	
<b>Real Net Worth (\$1,000)</b>											
1-Hunting Cow-Calf (200 Cows) <sup>1</sup>	2,056.76	2,218.86	2,283.19	2,337.48	2,373.22	2,414.46	2,457.12	2,493.24	2,525.14	2,554.94	
2-Hunting Cow-Calf (100 Cows) <sup>2</sup>	1,967.16	2,117.80	2,175.49	2,223.01	2,258.33	2,294.59	2,332.83	2,364.95	2,392.43	2,416.44	
3-Hunting Only	1,864.11	2,000.89	2,050.70	2,091.42	2,126.57	2,158.24	2,192.81	2,221.80	2,245.83	2,265.22	
4-Hunting & Stockers	1,874.41	2,019.49	2,077.22	2,125.60	2,168.20	2,206.81	2,247.69	2,282.66	2,312.33	2,337.49	

<sup>1</sup>One animal unit to 10 acres stocking rate. <sup>2</sup>One animal unit to 20 acres stocking rate.

Management options have varying opportunities, challenges and benefits ranging from immediate cash flow survival to long-term production and equity retention. While the analysis does not suggest a "best management practice" in all situations, it provides increased insight into the multi-year impacts of managing cattle and hunting enterprises in concert.