

Public Lands

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The **John Q. Public Ranch** is representative of a cow/calf/hay operation near the Arizona/Utah border. Production practices, costs of production, market prices, weather patterns, and other information are based on data from the region in order to provide a realistic setting. The probabilities of risk events were also calculated using actual data, however slight modifications were sometimes made to maintain the workability and realism of the game.

The ranch runs 650 mother beef cows with annual non feed productions costs of \$230 per cow. Calving typically occurs in March-April. Calves are weaned in October and can be sold or retained as yearlings. The Public Ranch historically has a 92 percent weaning percentage and replaces 20 percent of their cows. This leaves 468 calves (100%-8%-20%), weighing 550 pounds (for steers and heifers, alike), to retain as yearlings or market for \$95.00 per hundredweight. Cull cows weighing 1,100 pounds are sold at the end of each year for \$45.00 per hundredweight.

Beef Cattle Production

Quantity	650 head
Production costs per unit	\$230 per cow
Weaning Percentage	92%
Average Net Sale Weight	550 pounds per weaned calf
Initial Market Price	\$95.00 per hundredweight
Annual Hay Consumption	0.36 tons per cow
Replacement percentage	20%
Sale weight per cull unit	1,100 pounds per cow
Net Sale Price	\$45.00 per hundredweight

The Public Ranch also raises 100 acres of hay each year to use as one month of winter feed for their 650 cows. Normal annual yield is 2.5 tons per acre, which costs \$60.00 per acre to produce. When you begin the simulation, there is 250 tons of hay in inventory with a market value of \$80 per ton. There are also 150 head of steer calves in inventory that were retained from the previous year's calf crop.

Crop Production

Crop Acres	100 acres
Normal Annual Yield	2.5 tons per acre
Production Costs	\$60.00 per acre
Initial Inventory	250 tons
Initial Market Price	\$80.00 per ton

The Public Ranch expects to continue retaining 150 head of weaned calves to feed as yearlings. This means that they expect to sell 318 calves at weaning, 130 cull cows, and 148 yearlings weighing 850 pounds during the each year of the simulation. Total sales would generate \$336,689 in revenues. Their expenses would total \$296,429 leaving an annual cow ranch profit of \$40,260.

Expected Annual Net Ranch Income

Expected Revenues		Expected Expenses	
Weaned Calves	318 head = \$166,155	Cows	650 cows = \$149,500
Cull Cows	130 head = \$64,350	Hay	100 acres = \$6,000
Yearlings	148 head = \$106,184	Yearlings	150 head = \$21,000
		Grazing	7495 AUMs = \$119,929
Annual total:	\$336,689	Annual total:	\$296,429

Profit = \$40,260 per year

DECISIONS

Year 1	Risk and Probability of Occurrence	Impact	Risk Management Strategy Decision
Period 1	<p><u>Winter Precipitation</u> Extremely Dry Winter (5%) Dry Winter (15%) Normal Winter (65%) Wet Winter (15%)</p> <p>.....</p> <p><u>Corn Planting Intentions</u> > 80 million acres (20%) 70 - 80 million acres (65%) < 70 million acres (15%)</p>	<ul style="list-style-type: none"> • In a normal winter, hay prices decrease due to seasonal trends. • In a dry winter, available grazing and hay production will decrease. The increased use of hay and decreased production will increase hay prices. Higher feed costs decrease cattle prices. • In extremely dry winters, the effects are even more dramatic and weaning weights will also decrease due to stress related to feed shortages. • If it is a wet winter, hay prices decrease due to reduced demand and expected increases in summer forage production. Weaning weights will increase due to good feed availability but weaning percentages will decrease due to an increase in death loss related to wet weather. <p>.....</p> <ul style="list-style-type: none"> • If planting intentions are high, hay prices fall because corn is a competitive feed alternative. Lower feed costs increase cattle prices. • Normal planting intentions have small seasonal effects on prices. • If planting intentions are low, hay prices rise because corn is a competitive feed alternative. Higher feed costs decrease cattle prices. 	<p>Decision 1: Buy or sell hay</p> <p>Hay may be purchased to increase feed inventory or sold to generate cash income. Consider current inventory, possible feed usage and probabilities of increases or decreases in price. You may not carry a negative inventory. Any shortages are automatically covered by additional purchases at the prevailing market price.</p> <p>The impact of a severe winter on weaning weight is dependent upon the amount of hay that you have to buy during the winter to meet feeding requirements. Click 'View' in the risk impact table for more details.</p> <p>Decision 2: Forward price (800-900 lb.) yearlings</p> <p>You may forward price any of the background calves you have retained from the previous year's calf crop. They will be delivered on April 1st as 800-900 lb. Yearlings.</p> <p>.....</p> <p>Post Period Decision: Yearlings to run on grass</p> <p>You may choose to retain ownership or purchase more 800-900 lb. yearlings to run on grass for the next three months. Expect them to gain 130 lbs. and consume 2.5 AUMs.</p>
Period 2	<p><u>Corn Crop Condition Report</u> Excellent (20%) Normal (65%) Poor (15%)</p> <p>.....</p> <p><u>Spring Precipitation</u> Excellent (20%) Normal (50%) Poor (23%) Very Poor (7%)</p>	<ul style="list-style-type: none"> • Hay prices will fall and calf prices will rise when crop conditions are excellent because corn is a competitive feed alternative. • Hay prices decrease due to routine market price seasonality when the corn crop is normal. • Hay prices increase and calf prices decrease when the corn crop condition is poor. <p>.....</p> <ul style="list-style-type: none"> • If spring precipitation is excellent, forage and livestock yields will increase. Expect hay prices to decrease due to shifts in supply and demand. Lower feed costs increase cattle prices. • Normal precipitation will have small seasonal effects on prices. 	<p>Decision 1: Buy or sell cow/calf pairs</p> <p>You can adjust the size of your mother cow herd by buying or selling cow/calf pairs. Be sure to carefully consider the annual grazing that you have available.</p> <p>Decision 2: Leasing additional private range</p> <p>You can lease 500 AUMs of additional private range at \$12 per AUM. This grazing resource would be utilized completely before using public grazing resources.</p> <p>Decision 3: Forward price (900-1000 lb.) yearlings</p> <p>You may forward price any of the yearlings that you have on grass. They will be delivered on July 1st.</p> <p>.....</p>

Period 2 (cont.)		<ul style="list-style-type: none"> Poor spring precipitation will decrease forage and livestock yields. Expect hay prices to increase due to shifts in supply and demand. Higher feed costs decrease cattle prices. Very poor spring precipitation will have an even more dramatic effect. 	<p>Post Period Decision: Retain yearlings on grass</p> <p>You may choose to retain ownership of the 900-1000 lb. yearlings and continue to run them on grass for two more months. Expect them to gain 80 lbs. and consume 2 AUMs</p>
Period 3	<p><u>Summer Precipitation</u> Poor (15%) Average (65%) Good (15%) Too much (5%)</p> <p>.....</p> <p><u>U.S. Corn Production</u> > 9.5 billion bushels (3%) 8.5-9.5 billion bushels (39%) 8.0-8.5 billion bushels (56%) < 8.0 billion bushels (3%)</p>	<ul style="list-style-type: none"> Poor summer precipitation will decrease forage and livestock yields. Poor forage conditions will increase the price of hay and decrease the price of cattle. Average precipitation conditions will have small seasonal effects on prices. Good precipitation will increase forage and livestock yields. Good forage conditions will decrease the price of hay and increase the price of cattle. Too much precipitation will decrease forage and livestock yields from increased sickness/disease and decreased pasture access. Expect a small positive effect on prices. Large corn production will decrease hay prices and increase cattle prices because corn is a competitive feed source. Low corn production will increase hay prices and decrease cattle prices. 	<p>Decision 1: Buy or sell cow/calf pairs</p> <p>You can adjust the size of your mother cow herd by buying or selling cow/calf pairs. Be sure to carefully consider the remaining grazing that you have available this year.</p> <p>Decision 2: Forward price weaned calves</p> <p>Forward price any number of head you would like for October delivery at the current contract price.</p> <p>Decision 3: Forward price (1000-1100 lb.) yearlings</p> <p>You may forward price any of the yearlings that you have on grass. They will be delivered on Sept. 1st.</p> <p>.....</p> <p>Post Period Decision: Retain weaned calves</p> <p>You may choose to retain ownership of any weaned calves you have remaining in inventory. You will place them in a background operation until April 1st at a cost \$210 per head. Expect them to gain 300 lbs.</p>
Year 2	Risk and Probability of Occurrence	Impact	Risk Management Strategy Decision
Period 4	Same as Year 1.	Same as Year 1.	<p>Decision 1: Buy or sell hay</p> <p>Decision 2: Forward price (800-900 lb.) yearlings</p> <p>.....</p> <p>Post Period Decision: Yearlings to run on grass</p>
Period 5	Same as Year 1.	Same as Year 1.	<p>Decision 1: Buy or sell cow/calf pairs</p> <p>Decision 2: Leasing additional private range</p> <p>Decision 3: Forward price (900-1000 lb.) yearlings</p> <p>.....</p> <p>Post Period Decision: Retain yearlings on grass</p>
Period 6	Same as Year 1.	Same as Year 1.	<p>Decision 1: Buy or sell cow/calf pairs</p> <p>Decision 2: Forward price weaned calves</p> <p>Decision 3: Forward price (1000-1100 lb.) yearlings</p>
Year End	<p>Hay inventory must be at 125 tons. Hay is automatically bought or sold at the current price.</p> <p>Retained background calf inventory is automatically set at 125 head by buying and or selling weaned calves at cash market prices.</p> <p>The size of the mother cow herd is automatically reset to 650 head by buying and selling bred cows on the cash market.</p>		



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