

## Calculating Rates to Charge for Vegetation Management with Livestock

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There is growing demand for using livestock for vegetation management. Goats are most commonly used for this emerging enterprise, but the day may not be too far away when skilled graziers will get paid to use cattle to manage vegetation.

Most graziers just shoot from the hip on developing bids for grazing/browsing projects. I've seen some bids offered that result in a loss for the grazier. This paper outlines a simple process for determining the fees to charge for landscape management with livestock that will produce a profit.

**Step 1:** Start with the end in mind. In other words, begin by establishing a profit target. In this example let's say we want to produce a \$50,000 profit.

**Step 2:** Add up the business overheads that we know we'd incur. That will probably include things like property taxes, salaries & benefits, depreciation & insurance on vehicles and equipment and so on. Let's say that when we add up the business overheads they come to \$100,000. Add this to the profit target. This is the total gross margin our business needs to generate. In this example  $\$50,000 + \$100,000 = \$150,000$ .

**Step 3:** Decide how much the vegetation management enterprise should contribute to the bottom line of the business. In our example let's say that we want it to contribute 1/3 of the bottom line. That means it needs to cover 1/3 of the profit and 1/3 of the business overheads. Therefore the vegetation management enterprise gross margin will have to be at least \$50,000 (1/3 of \$150,000).

**Step 4:** Calculate the gross product without income for vegetation management. To do that we need to build a stock flow showing deaths, sales, replacement rates, etc. and a livestock valuation using consistent, conservative values for the animals. In this case let's say we are dealing with a mob of 100 wethers. When we take out death loss and the animals we expect to cull, we'll see how many replacements we need to either buy or transfer in from the breeding herd to maintain the mob at 100. This gives us the information we need to build a trading account to calculate gross product:

$(\text{Close Inventory Value} + \text{Sales} - \text{Purchases} - \text{Open Inventory Value} = \text{Gross Product})$

Buying animals at market price, culling at depreciated prices and valuing the mob conservatively will probably result in a negative gross product. In this case let's say that the gross product is -\$5,000.

**Step 5:** Estimate direct costs and subtract them from the gross product to calculate gross margin. Total the direct costs (mineral, vaccine, ear tags, transportation), then

subtract the total from the gross product. Let's say the direct costs in our example will be \$10,000. That makes the gross margin -\$15,000:

Gross Product	- \$5,000
<u>Direct Costs</u>	<u>- \$10,000</u>
Gross Margin	- \$15,000

**Step 6:** Estimate "Enterprise Overheads." There will be some costs associated with the vegetation management that will be unique to this enterprise but aren't direct costs. These are overhead costs that will be incurred because of this enterprise. I call them *enterprise overheads*. In this case they include the cost of guard dogs, fencing & water costs, contract labor, gas to the site, insurance and depreciation.

It's easy to figure things like fuel costs. Let's say the project we are bidding on is a 40 mile round trip and that we plan to be there every day we have animals out there. If our truck gets 20 miles per gallon, that means we would use 2 gallons a day. With gas at \$3.25/gallon (ouch!) that means we'd be spending \$6.50 per day on gas.

Other costs like fencing and watering materials and equipment can be more difficult to estimate. This is how I would work through fencing costs for this project. A project like this will probably be done exclusively with temporary electric fencing. Let's say that replacing all of the fencing materials we will use on the project will take \$3,000. Furthermore, let's assume that on average the materials (e.g. poly wire, posts, chargers, etc.) have to be replaced every 3 years. That means the annual average depreciation would be \$1,000 (\$3,000/3 years = \$1,000). We can do the same with the guard dogs. Let's say a good dog costs about \$1,000 and will be effective for about 5 years. That makes the average dog depreciation about \$200/ year. We also figured that a guard dog eats about \$500 worth of dog food a year making the total cost of maintaining a dog about \$700/year. In our example project let's say that the enterprise overheads total roughly \$16,000.

**Step 7:** Subtract the enterprise overheads and business overheads from the enterprise gross margin. This is the total income this enterprise needs to generate to make its contribution to your profit target. In this case we need to generate \$81,000:

Gross Margin	- \$15,000
- Enterprise Overheads	\$16,000
<u>- Business Overheads</u>	<u>\$50,000</u>
Enterprise Revenue Target	- \$81,000

**Step 8:** Prorate the income required from the project based on the proportion of billable days. Here's how: Estimate the number of days we will have the animals out on projects and how many days they might be on this particular project. Let's say that we estimate that this project will take 100 days and that we will have animals contracted out for a total of 250 billable days on projects during the year. Therefore all of the costs

have to be covered and our profit has to be achieved in 250 days of work. This project being 100 days has to be 40% of the income for the vegetation management enterprise.

Forty percent of the revenue target of \$81,000 is \$32,400:

$$0.40 \times \$81,000 = \$32,400$$

Therefore, we need to bid \$32,400 on this project. Constructing our bid this way builds our profit target into the bid.

Determining the daily rate we have to charge is simple. Just divide the billable days into the total income we need to produce. In this case that's \$324/day.

$$\$81,000 \text{ gross income} / 250 \text{ days} = \$324/\text{day}$$

If the project were 200 acres we'd simply divide the total bid by the number of acres to determine the per acre charge, in this case it would be \$162:

$$\$32,400 / 200 \text{ acres} = \$162/\text{acre}$$

In summary:

1. Start with the end in mind by establishing a profit target.
2. Estimate the business overheads and add them to the profit target.
3. Decide the proportion of this total you want the vegetation management enterprise to contribute to the bottom line of the business.
4. Calculate the enterprise gross product without income for vegetation management.
5. Estimate direct costs and subtract them from the gross product to calculate gross margin.
6. Estimate Enterprise Overheads.
7. Subtract the enterprise overheads and business overheads from the enterprise gross margin to establish a revenue target for this enterprise.
8. Prorate the income required from each particular project based on the proportion of billable days taken by that project.

Vegetation management enterprises are becoming more and more common. The process outlined in this paper will help you ensure that it contributes to the profitability of your business.